Program Performance Review Self-Study

Master of Science in Computer Science

2021-2022

Final Draft 2/11/2022

This is the self-study for the 2021-2022 Program Performance Review (PPR) of the Master of Science (MS) in Computer Science (CS), housed within the Department of Computer Science at California State University, Fullerton (CSUF).

I. Department/Program Mission, Goals and Environment

A. Mission and Goals

The mission statement of the CSUF campus is:

> Learning is preeminent at California State University, Fullerton. We aspire to combine the best qualities of teaching and research universities where actively engaged students, faculty and staff work in close collaboration to expand knowledge.
>
> Our affordable undergraduate and graduate programs provide students the best of current practice, theory and research and integrate professional studies with preparation in the arts and sciences. Through experiences in and out of the classroom, students develop the habit of intellectual inquiry, prepare for challenging professions, strengthen relationships to their communities and contribute productively to society.
>
> We are a comprehensive, regional university with a global outlook, located in Orange County, a technologically rich and culturally vibrant area of metropolitan Los Angeles. Our expertise and diversity serve as a distinctive resource and catalyst for partnerships with public and private organizations. We strive to be a center of activity essential to the intellectual, cultural and economic development of our region.

The CS Department contributes to this mission, and has articulated the following additional mission statement:

> We provide students with:
> - a strong knowledge of computer science fundamentals and computer system technology.
> - practical problem-solving skills for creating computer systems and applications.
> - the ability and motivation to adapt as technology advances.
>
> Creative research and professional development by our faculty and our students are essential to our success.

CSUF's goals are:

- To ensure the preeminence of learning
- To provide high-quality programs that meet the evolving needs of our students, community and region
- To enhance scholarly and creative activity
- To make collaboration integral to our activities

- To create an environment where all students feel welcome and have the opportunity to succeed
- To increase external support for university programs and priorities
- To expand connections and partnerships with our region
- To strengthen institutional effectiveness, collegial governance and our sense of community

Consonant with these, the CS Department's goals are to provide high-quality and accessible educational programs; advance scholarly computer science research; and contribute positively to the campus, local community, and global computer science community.

B. Changes and Trends

Computer science programs are the conventional preparation for a career in software development or data science. Demand and remuneration for these careers is both strong and growing, so enrollment in our minor, BS program, and MS programs have grown, and is expected to continue to grow. In response the CS department has been steadily hiring full-time tenure-track faculty and supplementing their numbers with part time instructors.

The core computer science canon is stable science, but the technologies and business practices used in the implementation of that science evolve rapidly. Our curriculum adapts by making incremental improvements to longstanding core courses, and curating a dynamic portfolio of elective courses. Recently-hired faculty have developed elective courses in timely subjects including:

- CPSC - 375 - Introduction to Data Science and Big Data
- CPSC - 455 - Web Security
- CPSC - 458 - Malware Analysis
- CPSC - 459 - Blockchain Technologies
- CPSC - 479 - Introduction to High Performance Computing
- CPSC - 483 - Data Mining and Pattern Recognition
- CPSC - 487 - Computational Epidemiology
- CPSC - 515 - Mobile Computing
- CPSC - 552 - Cyber Forensics
- CPSC - 559 - Advanced Blockchain Technologies
- CPSC - 587 - Computer Vision and Deep Learning

Diversity is a longstanding challenge for computing problems. Women and Black, Indigenous, and Latino students are unfortunately under-represented in our programs, which is sadly typical. The department is pursuing a variety of formal and informal strategies to improve the situation, including grant-funded projects (https://news.fullerton.edu/2021/03/650000-grant-to-attract-retain-and-graduate-women-in-computer-science/), curriculum interventions, faculty professional development, and inclusive hiring practices.

C. Priorities for the Future

The department is cultivating expertise in cybersecurity. There is a great national need for secure and trustworthy computing platforms. This dovetails with a locus of industrial expertise and job opportunities in the Fullerton area. In the long term, we project that cybersecurity careers will be outsourcing-resistant for our students. CSUF has created a Center for Cybersecurity (http://www.fullerton.edu/cybersecurity/) and many recent faculty hires are cybersecurity experts. We plan to continue this investment in cybersecurity.

More broadly, the department aims to improve the quality of its programs, job placement of its graduates, and diversity of its student body. We strive to better meet enrollment demand by hiring more full-time faculty and making effective use of available physical space. The COVID pandemic has inspired us to make greater use of online course delivery to sidestep our limited supply of classrooms.

D. Self-Support Programs

The CS department does not currently have any self-support programs. There is an Accelerated Master of Science in Computer Science (AMSCS) program under development and review.

II. Department/Program Description and Analysis

A. Substantial Curricular Changes

Effective for the recent 2020-2021 academic year, the course requirements of the CS MS program were overhauled. The old requirements were (https://catalog.fullerton.edu/preview_program.php?catoid=52&poid=24637):

- Required Courses (4)
    - CPSC 440 - Computer System Architecture (3)
    - CPSC 462 - Software Design (3)
    - CPSC 589 - Seminar in Computer Science (3)
    - CPSC 597 - Project (3) or CPSC 598 - Thesis (3)
- Required Elective (choose 1)
    - CPSC 541 - Systems and Software Standards and Requirements (3)
    - CPSC 542 - Software Verification and Validation (3)
    - CPSC 543 - Software Maintenance (3)
    - CPSC 544 - Advanced Software Process (3)
    - CPSC 545 - Software Design and Architecture (3)
    - CPSC 546 - Modern Software Management (3)
    - CPSC 547 - Software Measurement (3)
    - CPSC 548 - Professional, Ethical and Legal Issues for Software Engineers (3)
- Electives

- Choose 5 400/500-level CS courses with at most 3 at 400-level

The new requirements are
(https://catalog.fullerton.edu/preview_program.php?catoid=70&poid=32661)

- Required Courses (2)
  - CPSC 589 - Seminar in Computer Science (3)
  - CPSC 597 - Project (3) or CPSC 598 - Thesis (3)
- Required Electives (at least one course from three of the four categories below)
  - Computer Applications
    - CPSC 531 - Advanced Database Management (3)
    - CPSC 566 - Advanced Computer Graphics (3)
    - CPSC 583 - Expert Systems Design Theory (3)
    - CPSC 585 - Artificial Neural Networks (3)
  - Computer Systems
    - CPSC 551 - Operating Systems Design (3)
    - CPSC 552 - Cyber Forensics (3)
    - CPSC 558 - Advanced Computer Networking (3)
  - Software Engineering
    - CPSC 541 - Systems and Software Standards and Requirements (3)
    - CPSC 542 - Software Verification and Validation (3)
    - CPSC 543 - Software Maintenance (3)
    - CPSC 544 - Advanced Software Process (3)
    - CPSC 545 - Software Design and Architecture (3)
    - CPSC 546 - Modern Software Management (3)
    - CPSC 547 - Software Measurement (3)
    - CPSC 548 - Professional, Ethical and Legal Issues for Software Engineers (3)
  - Theoretical Computer Science
    - CPSC 535 - Advanced Algorithms (3)
  - Electives
    - Choose 5 400/500-level CS courses with at most 3 at 400-level

The new requirements resemble those of peer institutions. They are intended to push graduates toward expanding their horizons to include breadth. The old requirements were less proscriptive. The spirit of that flexibility was to allow students to customize a rigorous study plan. While some did, many students chose courses based on short-term considerations (e.g. time availability or scheduling with friends), to focus on only a narrow set of topics, or to minimize perceived difficulty. The new requirements are more rigorous and help our students to make the most of the growth opportunity of their graduate studies.

While not the subject of this Review, the CS department has created an Accelerated MS in Software Engineering program, and made many curricular improvements to the BS in CS program.

No programs have been discontinued since the last review.

B. Structure of the Program

A CS MS student's studies generally involve five phases:

1. admitted with conditional graduate standing;
2. achieving classified graduate standing by completing a study plan and any applicable foundational breadth courses;
3. completing course requirements;
4. planning a thesis or project in CPSC 589 - Seminar in Computer Science; and
5. completing the thesis/project in CPSC 597 - Project or CPSC 598 – Thesis.

As stated in the university catalog (https://catalog.fullerton.edu/preview_program.php?catoid=70&poid=32661) the requirements to be admitted with conditional graduate standing are:

- Meeting CSU requirements for admission to a master's degree program
- Minimum GPA of 2.5 for applicants graduated from domestic (U.S.) institutions with undergraduate degrees in engineering or computer science
- Minimum GPA of 2.5 for applicants graduated from ABET-accredited international institutions with undergraduate degrees in engineering or computer science
- Minimum GPA of 3.0 for applicants graduated from domestic (U.S.) institutions with undergraduate degrees other than engineering or computer science
- Minimum GPA of 3.0 for applicants with undergraduate degrees from non-ABET-accredited international institutions
- Students without an undergraduate degree in computer science must have completed at least one course in computer programming with a grade of at least "B-" within the past 2 years.

The spirit of these requirements is to strike a balance between providing opportunities to students of varied backgrounds (consistent with CSUF's mission) and being selective enough to ensure that admitted students are prepared to succeed. Our applicants vary across two orthogonal axes: whether they have an undergraduate degree in computer science or not; and whether they are domestic or international students. Many applicants pursue a MS in CS as part of a career change, which we welcome, as providing for California's workforce needs is part of CSUF's role. Though, this is a challenging course of study, as the technical nature of computer science requires students without a prior CS degree to complete several undergraduate-level background courses, as described below. The computer programming requirement is intended to ensure that incoming students have a reasonable level of interest and acumen in computer programming, which is foundational to computer science. Such courses are widely available at practically all universities, and in particular are available at low cost at community colleges. Pragmatically, grading and accreditation practices vary throughout the world. Some countries do not describe our field as "computer science" and instead use synonymous terms.

A student has classified graduate standing when they have completed any required background courses, and worked with an advisor to plan their course of study. They must achieve this standing early (before completing more than 13 units of study plan courses). The formal requirements are:

1. For students without a bachelor's degree in computer science, satisfactory completion of the following courses or their equivalents. These courses may also have prerequisites, and students without preparation in a closely related degree may have additional work to complete: CPSC 121, CPSC 131, CPSC 240, CPSC 323, CPSC 335, CPSC 351, CPSC 362, MATH 270A, MATH 270B, MATH 338.
2. For all students, approval of a formal study plan (see description below) by the Computer Science Graduate Adviser and the Associate Vice President, Academic Programs (or designee).

The courses listed in item 1. are *foundational breadth courses* and represent a minimal subset of the CS BS degree that provides adequate preparation for graduate-level CS courses. Students with zero relevant background complete all ten courses. The "or their equivalents" clause means that students may substitute past relevant coursework for some of the breadth requirements. Item 2. is a requirement common to CSUF MS programs. In the course of developing a study plan, a student familiarizes themselves with the program course requirements, their content, and in consultation with a graduate adviser, makes a plan that supports their career goals. The plan is written and goes through a formal approval process.

The course requirements involve 30 units (ordinarily 10 courses). The list of requirements is detailed in section II.A above. As explained in that section, the requirements were revised recently to improve rigor and student success.

The capstone of the program is a self-directed project or thesis. A project involves developing a novel software artifact and a written report. A thesis involves novel scholarly research and completion of a formal thesis report document submitted to the campus library. Generally, a project is appropriate for students using the MS as a terminal degree in preparation for an industry career, while a thesis is appropriate for students aspiring to doctoral study or an academic career. The project option is more popular.

Students complete their project in two courses, generally taken in the last two semesters of their studies. CPSC 589 - Seminar in Computer Science involves performing a survey of CS literature, choosing a topic for their project/thesis, and having their topic approved through a formal written process. As part of this, students learn about the research, publication, writing, presentation, and citation norms of the discipline. In CPSC 597 – Project, students implement their proposal, deliver a software artifact, write a report detailing their achievements, and defend their project with an oral presentation. CPSC 598 – Thesis involves an analogous process of performing research, writing a scholarly thesis document, and defending the thesis with an oral presentation, under close supervision by a thesis adviser.

C. Data Analysis

This section is in reference to the data provided by the Office of Assessment and Institutional Effectiveness. That data is presented in section VII. B. Graduate Degree Programs.

Tables 5 and 6 show that in academic years 2016-2017, 2017-2018, and 2018-2019, the number of applications are robust (roughly 700-1,000 applicants per year). In this period, enrollments grow at a steady and sustainable rate, with 85, 93, and 117 students enrolled in each year respectively. The 2019-2020 and 2021-2022 years show a plateau in applications and enrollments.

Table 7-A shows cohort sizes and graduation rates. Graduation rates are reasonable for a challenging program. As discussed above, a significant number of incoming students must take foundational breadth courses which extend the length of their studies to as many as four or five years. Therefore, even when all students are on track, the 2-year graduation rate cannot approach 100%. As shown on the table, 2-year graduation rates generally range 66-75% and 4-year rates range 80-90%.

Table 8 shows that the number of degrees awarded ranges 89-118 per year, which is consistent with the enrollment and graduation rate statistics.

D. Enrollment

As discussed above, the long-term trend for enrollment is that of steady and sustained growth. This is consistent with the robust and growing global demand for computing expertise. There is a notable plateau in 2019-2020 and 2021-2022 that defies this long-term trend. This is attributable to world events of recent years that deterred international graduate study, namely a period of hostility toward student visas in the US executive branch, and the ongoing COVID-19 pandemic. Despite these headwinds, there is still enough interest to sustain the program, as enrollment remains only approximately 10% of applications.

E. Plans for Curriculum Changes

Since the course requirements were recently overhauled for the 2020-2021 academic year, we do not anticipate further structural changes in the short term. The new structure brings to light that course options have been thin in the Computer Systems and Theoretical Computer Science areas. Student feedback has indicated a need for more appealing 500-level electives. The recently-created CPSC – 515 - Mobile Computing and CPSC - 559 - Advanced Blockchain Technologies have been popular and partially alleviated this problem. Yet, 400-level electives still tend to be more popular among MS students than 500-level electives. Therefore we plan to introduce new 500-level courses in the areas of computer systems, theory, and timely electives.

F. Special Sessions Self-Support Programs

Self-support programs are not relevant to this Review.

III. Documentation of Student Academic Achievement and Assessment of Student Learning Outcomes

A. Assessment Plan

The CS department is a strong believer in program assessment. The department bylaws provide for a standing Assessment Committee and Assessment Coordinator role. The committee, in consultation with the Department as a whole, forms written assessment plans and executes routine collection, analysis, and reporting of assessment data. The CS department has three programs that undergo assessment: CS BS, CS MS, and Masters of Software Engineering (MSE). Each program has a separate assessment plan. The BS program assessment plan is elaborate, automated, and documented in detail at https://assessment.ecs.fullerton.edu/ . The BS program is accredited by ABET, so this assessment plan conforms to ABET's assessment norms. MSE program assessment is not relevant to this Report.

CS MS assessment is inspired by the driven by the list of six Student Learning Outcomes (SLOs) discussed below. SLO 1 is assessed via completion of study plans, as discussed below.

The remaining SLOs 2-6 are assessed via performance indicators, similar to the assessment plan for the BS program. There are 11 Performance Indicators (PIs). Each PI is a specific, measurable, observable student achievement. Each SLO maps to a subset of relevant PIs as shown in the mapping table below. Each PI is measured in one or two courses, as shown in the table. Instructors of mapped courses are responsible for measuring PIs in these courses. Such an instructor is responsible for devising a measurement; measuring student achievement of the PI; coding each response into one three levels: Satisfactory, Developing, or Unsatisfactory; and reporting the total number of Satisfactory, Developing, and Unsatisfactory responses to the Assessment Coordinator. The best practice is to measure a PI in a specific subset of a relevant assignment. For example a 589 instructor can measure the "WRITE" PI, dealing with written communication, with the research survey paper assignment in that class, and the specific subset of rubric points corresponding to writing quality. Class-level PI data is aggregated, and quantitative thresholds are used to decide whether each SLO is being met or not met.

Data is collected and periodically in an *ad-hoc* fashion. When this happens, the department chair coordinates instructors in collection and submittal of PI data.

As of this writing, the department is discussing improvements to the assessment plan. The improvements include collecting data on a routine annual cycle, and updating the set of PIs and mapping.

B. Student Learning Outcomes (SLOs)

The Student Learning Outcomes (SLOs) for the CS MS are:

1. Demonstrate knowledge and competence in such fundamental areas of computer science as algorithms, design and analysis, computational theory, computer architecture, and software engineering
2. Be able to analyze a problem, define the computing requirements appropriate to its solution, and apply design principles in the construction of software systems of varying complexity following systematic processes
3. Be able to survey an area of interest, identify the key issues and problems of the selected area through review of academic literature, and provide potential solutions to the issues and problems
4. Be able to function effectively on a team to accomplish a common goal
5. Be able to communicate effectively with a range of audiences in both written and oral form
6. Be able to understand and weigh possible social impacts of their work

As discussed above, SLOs 2-6 are assessed using 11 PIs:

1. DSGN: Design software exhibiting design best practices, such as clarity, structured programming, separation of concerns, and/or design principles and patterns, and describe it clearly (using e.g. pseudocode, database schema, flowcharts, etc.)
2. REQ: Translate an informal description of a problem into a precise requirements statement and develop specifications for a software system based on requirements.
3. FDBK: Demonstrate ability to make improvements after receiving constructive feedback.
4. DOCS: Demonstrate an ability to teach oneself a new computing technology or environment from documentation.
5. COOP: Cooperate effectively on a group project.
6. PROC: Demonstrate knowledge of a formalized software engineering process (e.g. Agile, spiral, waterfall).
7. SPEAK: Deliver a clear oral presentation which meets the needs of the intended listener(s).
8. WRITE: Write a clear document which meets the needs of the intended reader(s).
9. CRIT: Analyze and critically weigh alternatives, discussing the trade-offs in different perspectives.
10. IMP: Apply critical thinking to analyze the impact of computing on our society.
11. INF: Demonstrate of informed awareness of computing's impact on our society.

The mapping table below defines the correspondence between SOs, PIs, and courses:

	SO 1	SO 2	SO 3	SO 4	SO 5	SO 6
	study plan completion					
541		DSGN, REQ			SPEAK	
545		DSGN, REQ				
589			FDBK		WRITE	
597						IMP, INF

DOCS, COOP, PROC, and CRIT are not currently mapped.

Study plan completion is used to assess SO 1 which relates to computer science fundamentals. As described above, when a student enters the program with deficiencies in fundamental background, they are assigned undergraduate-level foundational breadth courses to complete. Such a student must successfully complete these courses before their study plan can be approved. Therefore, when a student's study plan is approved, that implies that they are proficient in fundamental knowledge.

The criteria for success for the SOs are:

1. SO 1 is successful when at least 60% of students complete their study plan.
2. SO 2 is successful when, for each mapped PI, at least 60% of measurements are Satisfactory, and at least 80% of measurements are either Satisfactory or Developing.
3. SO 3 is successful when, for each mapped PI, at least 60% of measurements are Satisfactory, and at least 80% of measurements are either Satisfactory or Developing.
4. SO 4 is successful when, for each mapped PI, at least 60% of measurements are Satisfactory, and at least 80% of measurements are either Satisfactory or Developing.
5. SO 5 is successful when, for each mapped PI, at least 60% of measurements are Satisfactory, and at least 80% of measurements are either Satisfactory or Developing.
6. SO 6 is successful when, for each mapped PI, at least 60% of measurements are Satisfactory, and at least 80% of measurements are either Satisfactory or Developing.

C. Use of Assessment Results

Data was last collected and analyzed in Spring 2020. Data collection has been on hiatus for the balance of the COVID-19 pandemic. SOs 1, 2, 4, and 6 were successful. SO 3 was deemed unsuccessful because results for FDBK were only 50% Satisfactory and 61.36% Satisfactory or Developing, which are below the thresholds for success. SO 5 was deemed unsuccessful because results for SPEAK were only 42.03% Satisfactory, which is below the threshold for success; 89.89% were Satisfactory or Developing, which is above the success threshold. The CS

Graduate Committee was tasked with changing the curriculum to address student achievement of verbal communication and responsiveness to feedback. Improvements are under discussion.

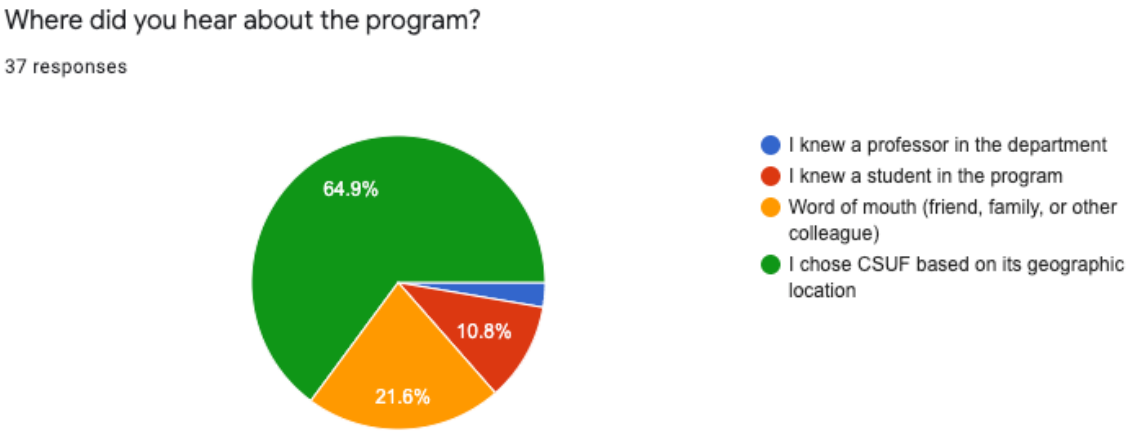
D. Other Quality Indicators

The department periodically conducts a student satisfaction survey. The survey focuses on student perception of quality and "soft" factors to provide an alternative perspective to program assessment, which focuses on program-level learning outcomes.

The survey is anonymous and distributed to CPSC 597 and 598 students, who tend to be near the end of the program. It includes one multiple choice question about where a student learned about the program; twelve multiple-choice questions that ask students about agreement with a statement, on a five-point Leikert scale, where 1=strongly disagree and 5=strongly agree; and an optional feedback comments question.

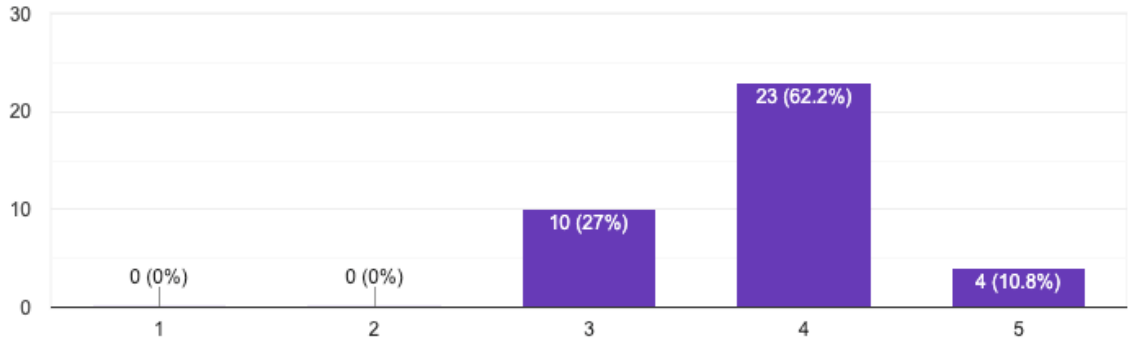
The survey was most recently administered in the first two weeks of Spring 2022 semester (January 24 through February 4). There were *n*=37 responses. The full results follow a brief synopsis of the results.

For the most part, responses indicate satisfaction with the program. There is modest dissatisfaction with the variety of courses. As noted elsewhere, the department has already noted a need for more 500-level electives. There is also modest dissatisfaction with the on-campus environment and networking opportunities. These may be attributed to the COVID-19 pandemic and emergency virtual instruction. The comments are a mix of positive feedback, and complaints about issues that are not actionable (e.g. parking policies).



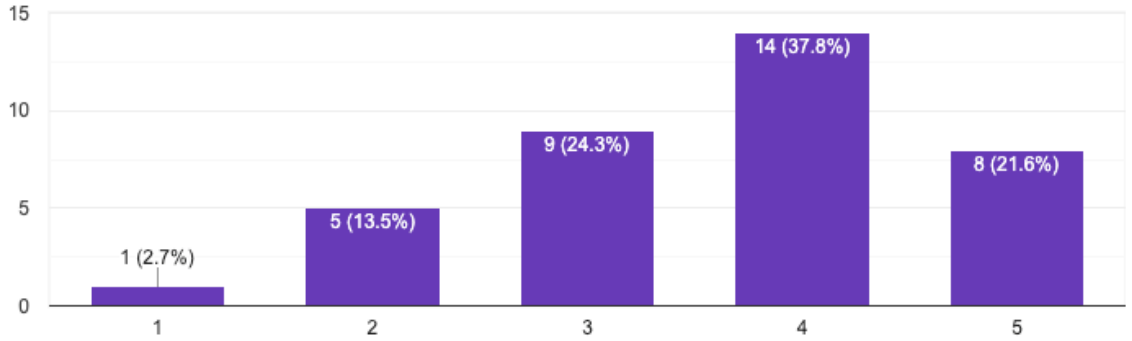
The program matches my expectations.

37 responses



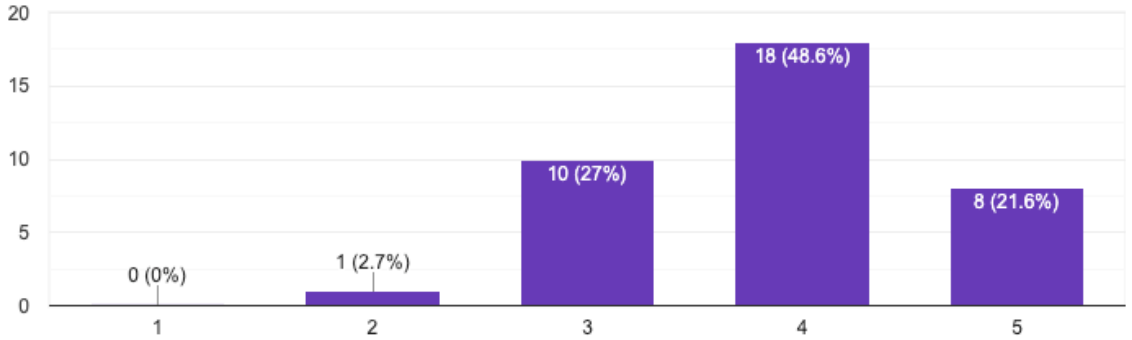
I am satisfied with the variety of courses.

37 responses



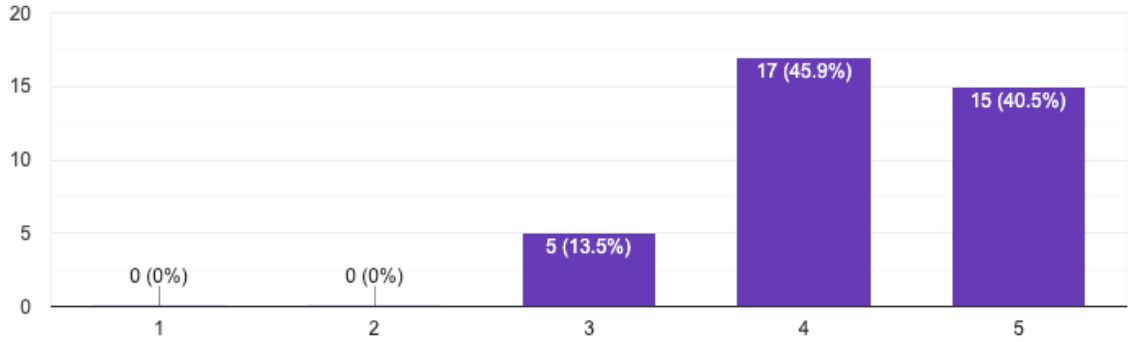
The course content is up-to-date.

37 responses



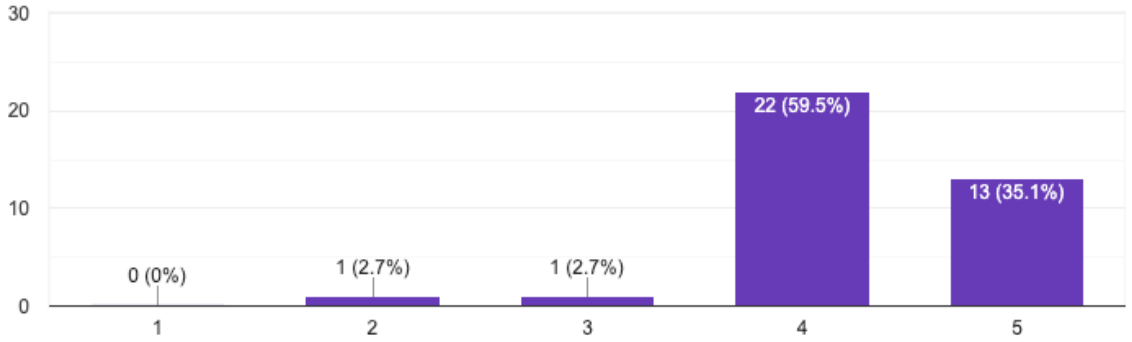
The requirements to complete the program are reasonable.

37 responses



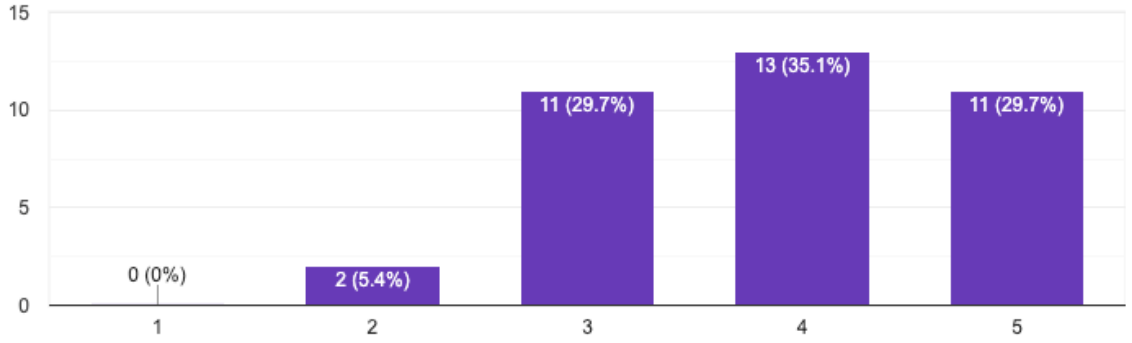
The faculty are knowledgeable.

37 responses



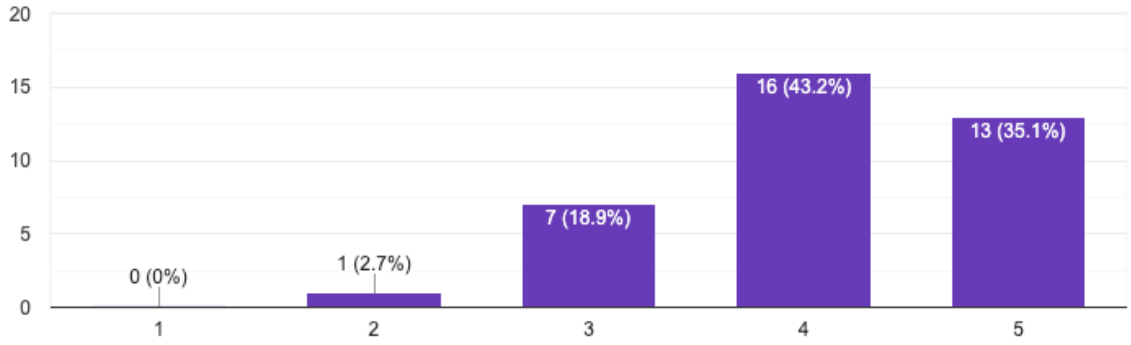
Faculty expertise is up-to-date.

37 responses



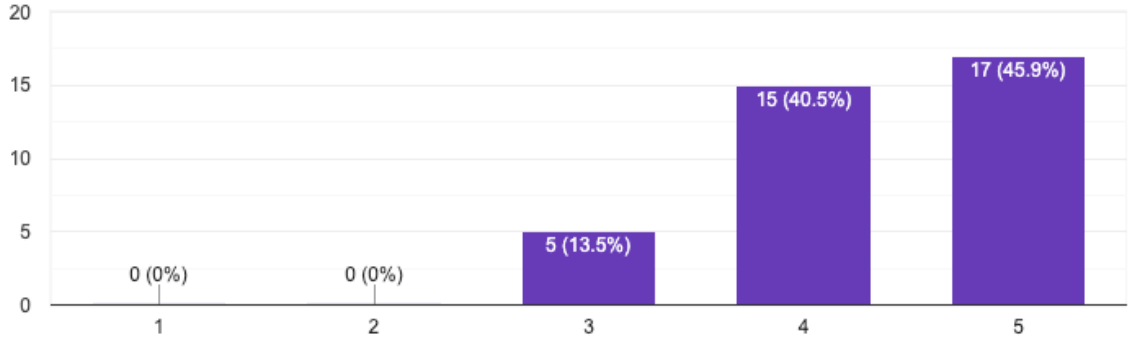
Faculty are committed to student learning.

37 responses



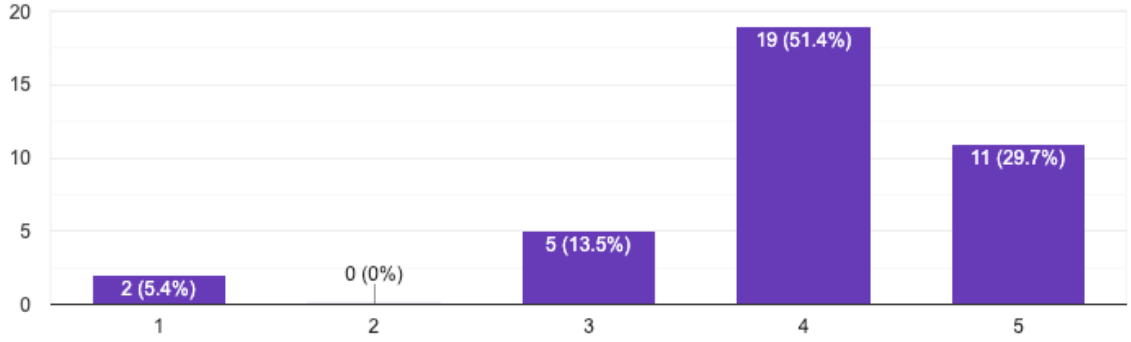
Faculty are accessible and helpful.

37 responses



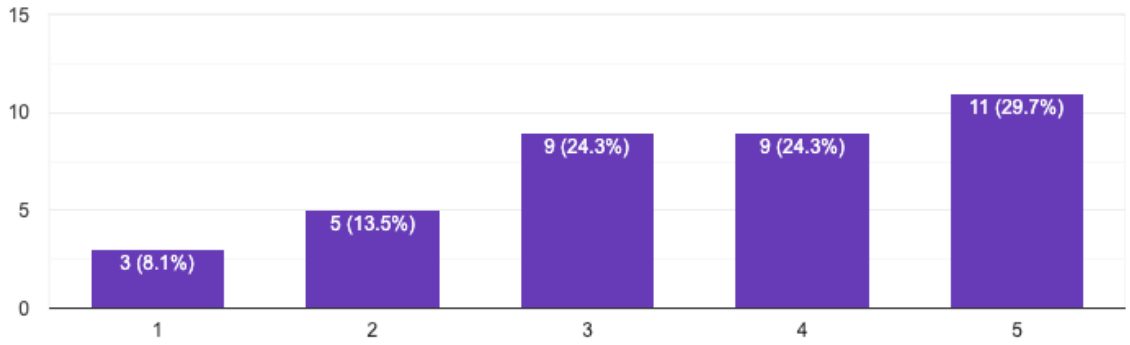
It was easy to fit in to the environment.

37 responses



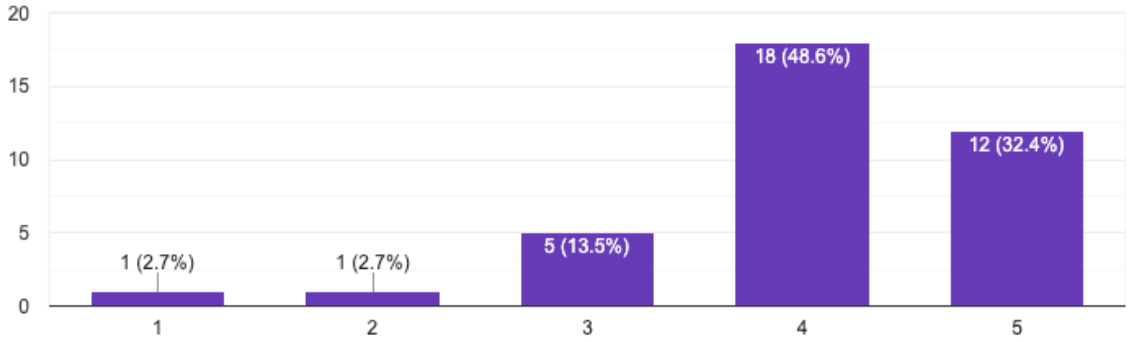
I like coming to school.

37 responses



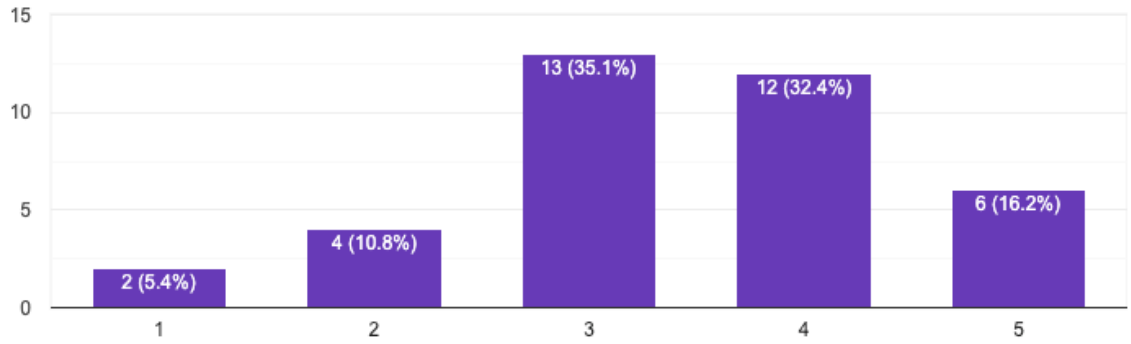
I know where to ask when I need help.

37 responses



I have made friends here.

37 responses



Please share any comments or suggestions that you might have (optional).

Overall I am satisfied with my time in the program. I came in with little CS background, so I appreciated having to take the foundational courses and getting exposure to core CS & Math concepts (Discrete Math, Compilers, OS, etc.). I would have liked more flexibility in choosing my upper division electives (400-level and 500-level). I wanted to take more 400-level classes, as many of them are very interesting and also are pre-reqs for the 500-level courses. I think the CS department would improve if more "good" professors were hired. A "good" professor to me is someone who understands the material, teaches it in a clear and engaging manner, and provides assignments and exams that are reasonable and practical. A "bad" professor that I had just read off PowerPoint slides (that weren't even his own). Then he gave us assignments that took up lots of time and were mostly busy work. Many of his labs didn't even work, because he didn't take the time to run through them himself. Finally, his exams were just word-for-word copies of definitions/concepts from the textbooks. Since the exams were open book, we just would Ctrl-F to search for the answers and the average on exams was consistently > 95%. The class felt like a waste of time, and I learned very little from it. A "good" professor that I had created his own lecture slides and taught at a pace where he covered a decent amount of material, but didn't bombard us with too much material. He created all the labs himself and gave previews of the labs in class to help us with core concepts. The labs were related to the course material, were practical and useful for future work in industry, and were also a reasonable amount of work that we could complete on time. Finally, his exams were difficult but reasonable, and you could get a decent score if you payed attention in class and studied for the exams. The class was interesting and engaging, and left me wanting to learn more about the field. I think this point about hiring & retaining "good" professors is very important, as most of the gripes I hear from other CS students is that X professor was horrible, or maybe just ok, and to try to avoid them if possible. I don't understand all that goes into hiring professors, but I think it contributes a lot to the overall experience of the MS program. I came into the program looking to learn more about Computer Science and land a job. Through my experience here I have achieved both, and for that I am grateful to CSUF and appreciative of all the support and resources offered. I hope this feedback helps, and that the program can be further improved for future students.
Please let us take classes online this semester. I mean people getting sick left and right, and most of the work we do for this program is on the computers anyway.
The program is amazing! Especially when courses were offered fully online. But there is lackluster selection of classes.
Please have every student enroll for subjects at the same time. Giving slots is a bit unfair to those students who have the last slot for selecting the subjects.
Instead of parttime faculty, I would prefer full time and who can give us some extra time.

I did not get the skills that I thought are going to help me start my career. For the most part the faculty was very helpful and really good. The fact that I have to pay $300 for parking a semester should be illegal, specially after all the money I pay to go to school.
The main problem I have had is that it is difficult to get into non-SE graduate classes that are very popular. Other than that, this has been a very positive experience and I really enjoy interacting with the faculty.
why is attendance grade allowed when only offering in person?

E. Other Modalities

The CS MS program is structured as an in-person program, and aside from the recent COVID-19 pandemic, courses are delivered face-to-face. Therefore, there are no adjustments to assessment for alternative modalities.

IV. Faculty

A. Changes

The CS department is engaged in a sustained hiring campaign in order to keep up with increases in enrollment demand. The College of Engineering and Computer Science has been supportive in providing hiring lines. Since the last CS MS PPR in the 2013-2014 academic year, the department has hired 9 tenure-line faculty:

1. Sampson Akwafuo (2021)
2. Doina Bein (2015)
3. Wenlin Han (2017)
4. Paul Salvador Inventado (2017)
5. Rong Jin (2021)
6. Shilpa Lakhanpal (2019)
7. Anand Panangadan (2015)
8. Kanika Sood (2019)
9. Abishek Verma (2014)

Abishek Verma resigned, so there has been a net increase of 8 full time tenured/tenure-track faculty. These new faculty have enabled the department to maintain a reasonable mix of part-time and full-time faculty. Furthermore, the new hires have brought an influx of expertise and vibrancy to the department. As can be seen on their curriculum vitae (section VIII.D), recent hires have proposed new courses in vital areas and published numerous research articles raising the profile of the department.

The composition of job titles is:

- Full-Time Lecturer: 4
- Assistant Professor: 6
- Associate Professor: 6
- Professor: 6

Tenure density among full-time faculty is 55%.

B. Hiring Priorities

It is likely that our hiring campaign will continue, and we will hire additional full-time faculty in the coming years. CSUF is a primarily teaching-focused access institution, so our first priority in hiring is finding candidates who are willing and able to thrive in our environment. Another priority is to bolster our department's expertise in cybersecurity.

C. Role of Full-Time and Part-Time Faculty

Service is integrated into the workload of full-time faculty. Consequently, full-time faculty take both formal and informal leadership roles within the department. Full-time faculty contribute to internal governance, curriculum development, and research policy through the department's standing committees: Executive Committee, Undergraduate Committee, Graduate Committee, Instructional Resources Committee, Personnel Committee, Selection Committee (hiring search), and Assessment Committee. Most relevant to this Report are the Graduate Committee, which directs the CS MS program, and the Assessment Committee which manages assessment of programs including the MS program.

Each permanent course has a Specialty Group, which is a committee of full-time faculty who shepherd the course; and a Course Coordinator, who is a single full-time faculty member who chairs the Specialty Group and serves as a point person for the course. Course Coordinators serve a mentorship role in orienting new faculty to courses, especially new part-time faculty.

Full-time faculty also provide informal leadership in numerous ways, including but not limited to curating and sharing course materials, developing the computing platform used in introductory courses ("Tuffix"), pursuing grants, and directing research programs.

The role of part-time faculty is precisely to teach their assigned classes. Several of our committed part-time faculty go above and beyond these duties to collaborate in curriculum development, grant activities, and scholarly research.

The majority of class sections are taught by part-time faculty. In spring 2022, the department offered 487.1 Weighted Teaching Units (WTUs) of instructions. Of these, 149.4 (31%) were taught by full-time faculty, while the remainder (69%) were taught by part-time faculty.

The department does not make significant use of Teaching Assistants. It does participate in the Supplemental Instruction (SI) program (http://www.fullerton.edu/si/). Supplemental Instruction

is an academic assistance program that provides weekly, peer-led group study sessions for students taking bottleneck, key gateway, or historically difficult courses – those with low pass and/or high withdrawal rates. SI is attached to a subject or course to provide students with a systematic and disciplined approach for processing the subject material assigned by the professor. SI sessions are led by a SI leader who is an exceptional student and has already mastered the course material; the SI leader has been trained to facilitate group sessions wherein students can meet to improve their understanding of course material, review and discuss important concepts, develop study strategies and prepare for exams.

D. Special Sessions Self-Support Programs

Self-support programs are not relevant to this Review.

V. Student Support and Advising

A. Advising Methods

MS students are advised through one-on-one meetings with designated advisers. The advisers are available for both virtual and face-to-face meetings. The primary adviser is a designated Graduate Advisor, who ordinarily is the chair of the department's Graduate Committee and is granted assigned time for this work. The department chair is also a designated adviser. Students must obtain adviser approval for their written study plan, and often seek advice regarding classification, foundational breadth courses, capstone projects/theses, and career opportunities.

The graduate committee also maintains the Graduate Handbook document which is available to students for download at the Computer Science Department website. The document explains the program requirements, provides guidance for navigating the program, and answers common advising questions. All students are required to read and understand the document and it is frequently referenced by the graduate advisors.

At the start of each semester for which new applicants were accepted, the graduate orientation event is held. The goal of the event is to welcome the new students, give them an overview of the program, and to answer any questions.

Throughout the semester the Computer Science Department office staff is available Monday – Friday 8:30 am – 5:30 pm (excluding holidays) the Computer Science Department office staff is available to assist students with any issues on the walk-in basis.

The College of Engineering and Computer Science also employs a full-time College International Adviser who specializes in advising international students. International students can schedule

appointments with the International Adviser in order to receive academic advice and to receive assistance with the complexities of international study.

B. Student Opportunities

The department's culture encourages graduate students to collaborate in faculty-directed scholarly research. Faculty introduce their research programs in CPSC 589, and students are encouraged to pursue novel research as part of their theses. The faculty Department Personnel Standards (DPS) put a premium on student collaborations, incentivizing faculty to collaborate with students. Many faculty have won grants that stipulate funding for student research assistants.

The campus Career Center dedicates staff and programs to the College of ECS specifically (http://www.fullerton.edu/career/students/specialists/engineering-and-computer-science.php). The local job market abounds in employment opportunities for computer science students, and students routinely find intern and permanent job positions.

VI. Resources and Facilities

A. State Support and Non-State-Support Resources

See Appendix section VIII.E. Resources for a breakdown of financial resources.

B. Special Facilities

The department maintains its own instructional computer labs:

Room Number	Equipment	Specifications
CS 101 Teaching Lab	34 + 1 (Instructor)	Apple iMac 27-in 5K (2019) Dual-Boot: MacOS Mojave (10.14.6) & Tuffix (Xubuntu 19.10) | Intel Core i5 3 GHz | 32 GB RAM | AMD Radeon Pro 570K (4GB)
	1 lectern	Navigational touch panel | Mac Mini | AppleTV | Doc Cam | Aux cables (HDMI & VGA)
	1 Printer	HP LaserJet 600 (M601)
	1 Ceiling Projector	Epson PowerLite Pro G7500
CS104 Teaching Lab	46 PCs	Dell Precision T1700 OS (Dual-Boot): Windows 10 Enterprise & Tuffix (Xubuntu 19.10) | Intel Core i7-4770 / 3.4 GHz / 16GB / NVIDIA Quadro K600
	1 Printer	HP LaserJet 600 (M601)
	1 Lectern	Navigational touch panel | Dell Precision T1700 | AppleTV | Doc Cam | Aux cables (HDMI & VGA)
	1 Projector	Epson PowerLite Pro G6750WU4
CS200 ECS Open Lab	32 PCs	Dell Precision T3500: Windows 10 Enterprise / x64 / 12 GB / 512 GB CT500MX500SSD / Quad Core Intel Xeon W3550 3.0GHz, Dell Pro P2412H 24-inch Widescreen LED Flat Panel / AD (ACAD) Domain
	1 Lectern	Navigational touch panel | Dell Optiplex 3050 | AppleTV | Aux cables (HDMI & VGA)
	1 Printer	Hewlett Packard LaserJet P4015x
CS202 ECS Open Lab	29: iMac	27 -inch Late 2013: 3.2 GHz intel Core i5 / 8 GB / 500GB, NVIDIA GeForce GT 755 (1GB) macOS Mojave10.14.6/Linux (Xubuntu v18.04 x64)
	1 Lectern	Navigational touch panel | Mac Mini | AppleTV | Doc Cam | Aux cables (HDMI & VGA)
	1 Printer	HP LaserJet P4015x
CS300 Teaching Lab	31 PCs	Dell Precision T1600: Windows 10 + Linux/ x64 / Quard Core Xeon E3-1225 / 16 GB Memory / 256 GB MX100 2.5 SSD / 1.0GB NVIDIA Quadro 600 Dual MON Graphic Card / Dell 22" Monitor / AD (ACAD) Domain
	1 Printer	HP LaserJet 600 (M601)
	1 Ceiling projector	HITACHI CP-X444

CS401 Project Lab	6 PCs	Dell Precision T5810: Windows 10 + Linux/ x64 / 16GB / Intel Xeon E5-1620 v3 @3.5 GHz / 500GB HD x2, Monitor: 24" Dell UltraSharp, DVD+/- RW, ZIP, 3.5 Inch FD.
	1 Printer	HP LaserJet P3015
	2 Surveillance	Provideo VL-650IR
CS408 Teaching Lab	40 + 1 (Instructor) PCs	Dell Optiplex 3050 SFF (Dual-Boot): Windows 10 Enterprise & Tuffix (Xubuntu 19.10) | 32 GB RAM | Intel Core i5-7500 3.4 GHz | Intel HD Graphics 630
	1 Printer	HP LaserJet 600 (M601)
	1 Lectern	Navigational touch panel | Dell Optiplex 3050 | AppleTV | Aux cables (HDMI & VGA)
	1 Ceiling projector	Epson PowerLite Pro G7500

In addition, the department maintains a data center in room CS-403. The data center hosts a shell server available to students and faculty (https://www.fullerton.edu/ecs/cs/resources/labs.php), faculty research servers, and other departmental servers.

The campus Division of Information Technology (IT) provides robust computing services to all CSUF students.

Titan Learning Commons
Pollak Library North First Floor, PLN-100

COMPUTER LAB FEATURES

- 84 PCs and 104 Macs
  - USB Port access
- 5 scanner stations
- 1 Adaptive workstation
- Daily laptops for pick-up
- Daily iPads for checkout
- DVD drives/media card readers for checkout
- Portable chargers for checkout
- Equipped Group Study Rooms
- Work space for personal laptops and collaborative activities
  - Portable whiteboards
  - Print-Only stations for printing
  - Wireless printing
- Mobile device charging stations

- CSVT machine for loading funds on your TitanCard

LANGUAGE INPUT SUPPORT
Western: French, German, Italian, Portuguese and Spanish
Eastern: Arabic, Persian, Chinese, Japanese, Korean, and Vietnamese
Language Grammar and Dictionary Support: English, French and Spanish

Interdisciplinary College Collaboration Space

Located on the 2nd floor of Pollak Library North. Collaboration space designed for students to use college-specific tools and software.

The Interdisciplinary College Collaboration Space is an area for students to utilize the technology they need for their majors.

This space gives students the unique opportunity to work outside of the classroom and gain insight from their peers. The lab provides specialized software for student access allowing collaboration between colleges in one space. Each college space includes a 65" Samsung display, with Apple TV (AirPlay), Microsoft wireless display (MiraCast), mobile whiteboards and comfortable collaboration seating.

Student Genius Center (SGC) - 4th Floor

COMPUTER LAB FEATURES
- 187 PCs and 21 Macs
  - USB Port access
- Work space for personal laptops and collaborative activities
  - Portable whiteboards
- Printing Options
  - Lab Computers Locations
  - Print-Only Stations
  - Wireless printing
- Mobile device charging stations

LANGUAGE INPUT SUPPORT
Western: French, German, Italian, Portuguese and Spanish
Eastern: Arabic, Persian, Chinese, Japanese, Korean, and Vietnamese
Language Grammar and Dictionary Support: English, French and Spanish

Virtual Computer Lab

The Virtual Computer Lab (VCL) is a free service for CSUF students, faculty, and staff to run university-licensed programs via the Internet.

Hardware:
VCL can run on Windows PC (32 bit or 64 bit), Mac, Linux, or ChromeBook.
Software:
Windows: Remote Desktop Connection (RDP) is already part of the OS and is readily available. Mac: The Remote Desktop Connection client needs to be installed. Downloaded free from iTunes Store opens in new window ChromeBook: The Chrome RDP client needs to be installed downloaded from Chrome Web Store opens in new window connection Speed:

VCL should work with a reliable high-speed internet connection.

Virtual Computer Lab (VCL) allows CSUF students, faculty, and staff to access university-licensed computer applications via the Internet. The new Virtual Computer Lab service is available free of charge to all CSUF students.

C. Library Resources

Designed to facilitate the delivery of recorded knowledge and information in support of instruction and faculty research, the Library serves as the hub of the University's information and instruction network. The Library also participates in the University's instruction programs and shares its commitment to lifelong learning.

The **Paulina June and George Pollak Library** provides a full range of services to faculty, students, and community users. The library's staff includes 3 library managers (Dean and Associate Deans), 24 librarians (including part-time librarians), 27 paraprofessionals, and approximately 80 student assistants. The Library's Web site (http://www.library.fullerton.edu) serves as a gateway to information about library resources and services as well as a vital component of the library's extensive instruction program.

I. Equipment and Technology

Pollak Library holds over 1,400,000 books which includes just over 770,000 physical books and over 690,000 electronic books. In addition, the library provides access to over 200 databases.

Databases of particular interest to Computer Sciences and Engineering include:

- ACM Digital Library
- IEEE *Xplore*
- Web of Science
- ScienceDirect
- SpringerLink Journals
- OmniFile Full Text Mega
- Academic Search Premier
- Wiley Online Library

Library Facilities

The Pollak Library has over 500 computers available located throughout the North and South buildings. The library is also home to the Information & Learning Commons (ILC), a main hub for research activities located on Library North first floor. A service desk at the Research Center is staffed by the Reference Team (librarians and library staff), while the Student Genius Center is staffed by the Information Technology staff. Both assist users with research needs and technical support.

Innovation/Makerspace Center

The Pollak Library houses the Innovation and Makerspace Center on the second floor of Library North. This center enhances creativity, innovation and talent through advanced technology such as virtual reality, augmented reality, 3D printing, Microsoft Surface Hub, Raspberry Pi, and high-end computing, (https://www.fullerton.edu/it/innovation_makerspace_center/).
In addition, a Data Visualization Center, for analyzing and displaying data, is located adjacent to the existing Innovation/Makerspace Center,
(https://www.fullerton.edu/it/services/data_visualization_center/).

Wireless access and docking stations are available throughout Library North and Library South. Electronic resources for the visually disabled are also available.

II. Library Hours

During the spring and fall semesters the Pollak Library is open roughly 92 hours per week. The Library has somewhat reduced hours during intersession, summer sessions, and fall and spring breaks and is open 24/7 during the weeks of finals. The Library is closed on some national holidays, including Martin Luther King Day, President's Day, Cesar Chavez Day, 4th of July, Memorial Day, Labor Day, Veteran's Day, and Thanksgiving Day. The Library's collections of electronic resources (databases, e-journals and e-books) are available 24/7 from the Library's Website.

III. Reference and Instruction Services

The Pollak Library's reference and instruction services are designed to teach students to be information literate, critical thinkers, and intelligent researchers. The mission of the Library's Instruction program is to prepare CSUF students to be successful information seekers in a rapidly changing technological environment.

Reference

The Library provides several types of reference services to students, faculty, and community. At the Research Center, located in the ILC, the Reference Team provides immediate, point-of-need

information and research assistance during the Library's scheduled hours of service. The Library's Reference team provides services using a variety of methods, including:

- Telephone Reference—Phone service during Library hours.
- Chat Reference—Online assistance available 24/7.
- Library Answers—Questions answered through email.
- IM Reference—Questions answered through instant messaging during Library hours.

The Library further offers a research consultation service that provides in-depth, one-on-one research assistance on a specific assignment, topic, or thesis. The sessions, available by appointment, are conducted by librarian subject specialists. Virtual consultations are also available for our distance students.

Instruction

Librarians at the Pollak Library teach between 350 and 450 instruction sessions per semester. The Library bases its instruction philosophy and practice on Association of College & Research Libraries' (ACRL) Information Literacy Competency Standards for Higher Education (http://www.ala.org/acrl/standards/informationliteracycompetency). The Library utilizes a team approach to deliver instruction to all departments and programs of the University. Librarians on the Engineering and Computer Sciences/Natural Sciences and Mathematics (ECS/NSM) Instruction Team provide library instruction to students in the program upon the request of the course instructor. This approach ensures students in need of research support are served through instruction sessions targeted to their specific course and delivered to meet the needs of specific research assignments or requirements.

Instruction librarians also create web portals that are tailored to each individual class that is brought into the library. These library guides provide information to students that is relevant to their assignments. A complete list of guides is available here: http://libraryguides.fullerton.edu/browse.php

To assess and evaluate instruction efforts, surveys are sent to faculty following library instruction sessions in an effort to gather constructive feedback. Results of the surveys are confidential, and provide library faculty with useful input pertaining to student learning, student engagement, and instructional resources. The Program also utilizes peer evaluation of selected instruction sessions to provide feedback to instruction librarians.

IV. Library Services

Circulation

Students and faculty check out materials using their Titan cards. Most library materials circulate for 10 weeks. However, checked out materials are subject to recall after 10 days if requested by another borrower. Students and faculty can check out up to 100 items. Renewal of library materials can be done in person, via the telephone or online at the Library's Website. For additional details, see http://www.library.fullerton.edu/about/guidelines/privileges.php

Course Reserves

The Library maintains a course reserves collection of supplementary course materials provided by faculty in support of course curriculum. The Library accommodates reserves in several formats. Digitized copies of print or audiovisual materials are accessed using course management software available to students and faculty via the campus portal site. Digitized reserves can be accessed at any time. Support for using Titanium, our campus course management software, is provided by The Faculty Development Center (assistance to faculty) and IT Help Desk (assistance to students). Reserves in any format (books, textbooks, sample projects, etc.) can be borrowed from the course reserves desk during the hours the Library is open. Complete information regarding course reserves can be found on the Library's Website at http://www.library.fullerton.edu/services/course-reserves.php.

Interlibrary Loan

ILLiad, a web-based interlibrary loan system, allows students and faculty to request articles, books, and other materials online. ILLiad is used when the requested materials are not in the library. Interlibrary loan staff may obtain requested items from libraries worldwide. Most materials can be borrowed free of charge. Detailed information regarding the Library's Interlibrary Loan services is maintained at the Library's Website at https://www.library.fullerton.edu/services/interlibrary-loan.php

The Library also maintains reciprocal borrowing arrangements that allow CSUF students, faculty, and staff to go directly to other libraries and borrow the resources they need in person. Reciprocal arrangements exist among the sister institutions in the California State University system and with several institutions in the local area, including Biola, Cerritos College, Hope International University, Marymount College, Santiago Canyon College, and the Southern California University of Health Sciences.

V. Library Collections

As mentioned in Section I above, the Library has a significant collection of materials that support the study and research required by the College of Engineering and Computer Science. The Library welcomes input from faculty on the selection and purchasing of resources and materials that support the curriculum and, as funds permit, the research needs of the faculty. The 23-campus California State University system now uses an integrated platform – Ex Libris Alma with the Ex Libris resource discovery system, Primo. This has provided an increased efficiency and equity for sharing of items among campuses.

Through collaboration with the California State University system as a whole, as well as local subscriptions, the Library provides access to resources essential to the study of Engineering and Computer Science, such as the ACM Digital Library, IEEE *Xplore*, Web of Science, and others listed above.Through an established approval plan, a Demand-Driven Acquisition (DDA)

program, selections by the Engineering librarian, and faculty requests, books in both print and electronic formats are added regularly.

Current monograph holdings are as follows:

Pollak Library Print and Electronic Book Collections for Engineering and Computer Science		
	Current Collection Holdings (Print & E)	**Electronic DDA**
Engineering: Call numbers T – TP	25,200 (17,639 & 7,561)	5,787
Chemistry: Call number QD	7,633 (6,376 & 1,257)	1,047
Math & Computer Science: Call number QA	20,791 (16,481 & 4,310)	4,359
Physics: Call number QC	10,433 (7,958 & 2,475)	1,886
Technology: Call number TS	1,306 (1,095 & 211)	122

The Library also maintains a number of journal subscriptions relevant to Engineering and Computer Science. As follows:

Pollak Library Journal Collections for Engineering and Computer Science	
	Current Collection Holdings
Engineering and Computer Science (including all subcategories, some of which are included below)	8,485
Civil Engineering	1,083
Electrical Engineering	2,209
Mechanical Engineering	1,198
Chemistry	1,455
Mathematics & **Computer Science**	5,425
Physics	2,570
Technology	310

VII. Long-Term Plans

A. Long-Term Plan Summary

Simply put, the long-term plan for the CS MS program is to continue on the current trajectory and pursue continuous improvement. Enrollment can continue to grow at a sustainable rate as full-time faculty hiring continues apace. The Graduate Committee will continue to incrementally refine the curriculum; the Assessment Committee will continue to improve the assessment process; and individual instructors will continue to develop their courses. The department plans

to continue its long-term investment in cybersecurity, which we expect to translate into more cybersecurity-related course offerings for MS students.

B. University and Department Mission and Goals

These goals harmonize with the mission statements of the university and department. Both bodies emphasize high quality and accessible educational opportunities.

C. Evidence

The MS program assessment plan will continue to be used to gather empirical evidence regarding the success of these long-term plans.

VIII. Appendices

A. Undergraduate Degree Programs

Undergraduate programs are not relevant to this Report.

B. Graduate Degree Programs

Table 5. Graduate Program Applications, Admissions, and Enrollments

Fall	# Applied	# Admitted	# Enrolled
2016	1,005	213	85
2017	763	252	93
2018	789	331	117
2019	762	285	91
2020	845	297	70

Table 6. Graduate Program Enrollment by Headcount and FTES

Academic Year (Annualized)	Headcount	FTES	FTES per Headcount
2016-2017	212	133.7	0.63
2017-2018	205	125.5	0.61
2018-2019	235	150.5	0.64
2019-2020	249	160.9	0.65
2020-2021	230	143.8	0.63

Table 7-A. Graduation Rates for Master's Programs

All Master's Entered in Fall:	Cohort	% Graduated		
		In 2 Years	In 3 Years	In 4 Years
2015	87	66.7%	81.6%	83.9%
2016	85	75.3%	83.5%	89.4%

2017	93	72.0%	83.9%	88.2%
2018	117	66.7%	81.2%	N/A
2019	91	53.8%	N/A	N/A

Table 8. Graduate Degrees Awarded

College Year	Degrees Awarded
2016-2017	118
2017-2018	92
2018-2019	83
2019-2020	101
2020-2021	89

C. Faculty

Table 9. Faculty Composition[1]

Fall	Tenured	Tenure-Track	Sabbaticals at 0.5	FERP at 0.5	Full-Time Lecturers	Actual FTEF
2016	10	4	0.0	0.5	3	16.5
2017	9	5	0.5	0.0	7	21.0
2018	9	5	0.5	0.0	4	18.0
2019	11	6	0.5	0.0	5	22.2
2020	11	5	0.0	0.0	4	20.0

[1] Headcount of tenured, tenure-track, sabbaticals at 0.5, and FERP at 0.5 includes full-time and part-time faculty. Headcount of lecturers only includes full-time faculty.

D. Faculty Curriculum Vitae

The full-time faculty of the department are, in alphabetical order:

1. Sampson Akwafuo
2. Doina Bein
3. Ning Chen
4. James S. Choi
5. Bin Cong
6. Mikhail Gofman
7. Wenlin Han
8. Floyd Holliday
9. Paul Salvador Inventado
10. Rong Jin
11. Chang-Hyun Jo
12. Shilpa Lakhanpal
13. Anand Panangadan
14. Christopher Ryu
15. Michael Shafae

16. Kanika Sood
17. Yun Tian
18. Shawn Wang
19. Kevin Wortman

Sampson Akwafuo, PhD

Dept. of Computer Science,
California State University, Fullerton
Fullerton, CA 92831
http://sakwafuo.ecs.fullerton.edu/

CS-550, ECS
Engineering and Computer Science,
Mobile: 4694516075
Email: sakwafuo@fullerton.edu
sakwafuo@gmail.com

Research Interest

Computational Epidemiology and Big-Data Analytics

- Application of data mining and machine learning techniques to epidemics prediction and detection in low-resource settings.
- Development of machine learning and statistical models for effective prediction of disease outbreaks in a specific locality: Case studies of Ebola VHF and Lassa Fever

Algorithms Development and Analysis

- Development of data-driven algorithms and modelling/simulation tools for studying disease spread patterns.

Emergency and Disaster Management

- Development of modified machine learning algorithms for clustering and pre-positioning depots, and optimization of post-disaster response logistics

Teaching Experience

Detailed teaching experience in Data Structures and Algorithms, Introduction to Programming, Computer Networks, Computational Epidemiology, Data Science, and Graph Theory. These include:
CPSC 597: Masters Project
CPSC 487: Computational Epidemiology
CPSC 471: Computer Communications
CPSC 335: Algorithm Engineering
CSCE 3110: Data Structures and Algorithms
CSCE 3530: Introduction to Computer Networks
CSCE 1040: Computer Science ll
CSCE 1030: Computer Science l

Educational Qualifications

2017 - 2021	**University of North Texas, Denton, US**	
		PhD Computer Science/Computational Epidemiology
2009 - 2010	**Glasgow Caledonian University, Glasgow, UK**	
		M.Sc. Computer Science/Networking
2000 - 2004	**Federal University of Technology, Owerri, Nigeria**	
		B.Sc. Computer Science and Mathematics (Hons.)

Relevant Working Experience

1. **California State University, Fullerton:**

(2021 – Date) **Assistant Professor**

Teaches 2 sections of CPSC 335 (Algorithm Design and Analysis;). The topics includes NP Completeness and decidability, classic algorithm design patterns, dynamic programming etc. Advises and supports 38 students of the department of Computer Science with graduate projects (CPSC 597). (Fall 2021)

2. **University of North Texas:**

(2017 – 2021)

Teaching Assistant on CSCE3110 (Data Structures and Algorithms); CSCE3530 (Networking – Sockets programming); CSCE1030 (Problem-solving with C++); Supported 84 students with programming projects and weekly practical sections. Taught Python to 47 students online.

Research Assistant (SP19, SU18) at the Centre for Computational Epidemiology and Response Analysis (**CeCERA**), on Re-Plan. Developed an improved algorithm for optimizing vehicle routing and RSS logistics. This ensures efficient delivery of interventions within strict time and capacity constraints

3.**Elton John AIDS Foundation/TIER**
(2016-2017)

Manager, IT/ Monitoring & Evaluation

Conducted M&E training and mentoring of staff of the M&E department of an NGO implementing the Elton John AIDS Foundation (EJAF) and Global Fund Projects. Designed and developed the comprehensive data management system and database. Maintained and trained staff on the use of the software. Produced quarterly M&E factsheets, reports and flyers. Trained volunteers and field collection officers. Ensure quality of data by conducting data quality assessment (DQA) exercises and developing platforms for data visualization.

4.**United State Agency for International Development/NACA**
(2015-2016)

Technical Manager, Monitoring and Evaluation, Abia State

Headed the M&E department for the National Agency for the Control of AIDS/ US President's Emergency Plan for AIDS Relief/NACA joint consortium project on HIV/AIDS in Abia Liaison Office. Developed a new database for the state. Trained and mentored the enlarged State team on the use of nationally approved M&E tools. Supervised quarterly Data Quality Assessment (DQA) exercise across supported facilities in the state. Developed the yearly M&E work plan, Result Framework for the State Program Implementation Unit (SPIU) and Ministry of Health.

5.**Department for International Development, DFID, UK**
(2012-2014)

Content Manager, NHRC – NACA, Nigeria

Pioneer Content Manager for the National HIV/AIDS Resource Centre, National Agency for the Control of AIDS (NACA). Hired by DFID UK and seconded to Nigeria. Designed and developed the document management system and the website. Managed the database and quarterly DHIS publications. Participated in the Local Epidemic Appraisal study for Most-At-Risk Population (MARP). Supervised production of Quarterly NACA Factsheet and a member of the annual report and UNAIDS GARPR team.

6. **Virgin Media UK**
(2010-2012)

Application Support Officer

Part of the Wireless model development and testing team. Handled customers' issues and provided support remotely. Ensured prompt resolution and documentation of issues. Wrote part of the comprehensive user manual for the new wireless modem. Provided routine back up and achieving

Selected Papers//Books

1. **Akwafuo, S**; Urbanovsky, J; Mikler, A. R.; ., Ihinegbu, C (2020); 'Dynamic Heuristic Algorithm for Management of Public Health Emergencies in Unreliable Settings. Proceedings of the 8Th IEEE Internal Conf. On Healthcare Informatics, Oldenburg, Germany(Pre-print)
2. **Akwafuo, S.E**; Mikler, A.R; Irany, F.A (2020): Optimization Models for Emergency Response and Post-Disaster Delivery Logistics: A Review of Current Approaches. *International Journal of Engineering Technologies and Management Research.* 7(8), pp. 35-49
3. **Akwafuo, S**., Guo, X. and Mikler, A. (2018): 'Epidemiological modelling of vaccination and reduced funeral rites interventions on the Reproduction Number , R 0 of Ebola virus disease in West Africa; *Journal of Infectious Diseases and Medical Microbiology*, 2(3), pp. 7–11.
4. **Akwafuo, S**., Shattock, A. and Mikler, A. R. (2017): 'Modelling HIV Intervention among Most-at-Risk/Key Population: Case Study of FWSS in Nigeria', *Journal of AIDS & Clinical Research*, 08(09), pp. 9–12. doi: 10.4172/2155-6113.1000732.
5. **Akwafuo S**,: A Computational Method for Estimating Impacts of HIV Prevention methods on specialized groups: Student Research Abstract (2018) : Proceedings of the 33rd Annual ACM Symposium on Applied Computing, Pau, France, 72-76.
6. **Akwafuo S**.; Ola-Mathews O, Agbo F: National Health Resource Centre (NHRC) as a Panacea for a Coordinated information generation, research and dissemination: Lessons from Nigeria, presented at Association of Health Information and Libraries in Africa, AHILA 2016, Tanzania
7. Idoko J; Asuquo G; Ogungbemi K; **Akwafuo S**; et al (2015): National HIV/AIDS Epidemiology and Impact Analysis in Nigeria, Federal Ministry of Health, Abuja, pp 538 -570 (Contribution)
8. **Akwafuo S**.: Analysis of the Effects of Videoconferencing over Desktop IP Network: Amazon Publishing; **ISBN:** 9781717788337

Honors and Awards:

1. CSUF ORSP Grant for Faculty Support for Scholarly or Creative Productivity, 2021-2022
2. GREAT (Graduate Research Experience Abroad Travel) Grant recipient, 2019
3. ACM Student Research Competition (SRC) Travel Award, 2018
4. UNT Toulouse Graduate School TBP Award, 2017
5. NSF Scholarship Award, Tapia Conference 2018
6. UNT International Students Scholarship Award, 2018-2021
7. Karnes-Bryant Centennial Scholarship Award, 2017
8. Life Membership Award, Glasgow Caledonian University Students Association, UK, 2010
9. Federal Government Scholarship Award, Nigeria, 2003

Professional Qualifications and Extra-curricular Associations:

- Cisco Certified Network Associate (CCNA)
- Oracle 10g Database Management Certified Associate (OCA)
- ISTQB Certified Software Tester (CTFL)
- Member, British Computer Society (MBCS)
- Member, Association of Computing Machinery (ACM)
- Member, National Society of Black Engineers (NSBE)
- President, African Students Association, GCU, Scotland, 2011
- Co-Chair, Glasgow Caledonian Students Parliament, (2010)

Courses and Workshops Attended:

- World Bank/University of New South Wales Training on Mathematical Modeling of Infectious Diseases, Lagos Nigeria, July 2013
- Training on the documentation of Research Outcomes and Research Ethics, University of Jinan, Shandong Province, China, August – October 2010
- ISEB Workshop on Software Development Methodologies and Database Management, British Computer Society, Glasgow UK, November 2011

Professional Volunteering Services:

Reviewer:

1. Medical, Biological Engineering and Computing (MBEC) Journal

2. Journal of Infectious Diseases and Epidemiology
3. International Journal of HIV/AIDS Prevention, Education and Behavioral Science
4. Journal of Health Informatics in Africa

Volunteering:

1. SciNetVolunteer, International Conference on High-Performance Computing, 2021
2. Student Volunteer, International Conference on High-Performance Computing, 2018
3. Volunteer, International Conference on AIDS and STDs in Africa, Cote d'Ivoire 2017
4. Volunteer, National Society of Black Engineers (NSBE), UNT Chapter, for mentoring NSBE Jr.

Academic Services/ Committees

1. ECS (Engineering and Computer Science) Committee on Diversity, Equity and Inclusion
2. University Commencement Committee
3. Assessment Committee

Others:

1. President, AfriOak Foundation
2. Board Member, The GEHOM Foundation

Doina Bein

Associate Professor
Department of Computer Science, California State University
Email: dbein@fullerton.edu
Website: ecs.fullerton.edu/~dbein
Office: (657) 278-4822
ORCID ID: 0000-0002-5072-1979

Work Experience

- 08/2015-present: Associate (2019-present)/Assistant Professor (2015-2019), Department of Computer Science, California State University, Fullerton

− Conducted research on machine learning, environmental-aware dynamic decision making, security of unmanned autonomous systems, and wireless sensor networks
− Instructor for CPSC 131 Data Structures (Fall 2017, Spring 2018, Spring 2019, Fall 2019), CPSC 313 Computer Impact (Summer 2017, Summer 2018, Summer 2019), CPSC 323 Compilers and Languages (Spring 2018, Summer 2018, Summer 2019), CPSC 335 Algorithms Engineering (Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2018, Spring 2019, Fall 2019, Spring 2020), CPSC 474 Parallel and Distributed Computing (Fall 2016, Fall 2017, Fall 2018, Fall 2019), CPSC 479 Introduction to High Performance Computing (Spring 2018, Spring 2019, Spring 2020), CPSC 439 Theory of Computation (Fall 2018), CPSC 535 (Spring 2020)

- 08/2013-05/2015: Part-time instructor, Department of Computer Science, UNLV

− Conducted research on contextual information value of sensor data and dynamic data-driven decision system models for perimeter patrol and border control using unmanned aerial vehicles
− Temporary instructor for CS 477/677 Advance Analysis of Algorithms (Fall 2014)
− Instructor for CS 202, Computer Science II (two sections, Fall 2014, Spring 2015)
− Instructor for CSC 117, Programming for Engineers (Fall 2013, Spring 2014)
− Instructor for CSC 115, Introduction to Computers (Spring 2014)

- 07/2011-08/2013: Acting Department Head, Intelligent Modeling, Applied Research Laboratory, The Pennsylvania State University

− Conducted research on contextual information value of sensor data and dynamic data-driven decision system models for an autonomous sensor network
− Leading designer and software programmer for a Java-based simulator for a fixed three-layer sensor network of increasing sensing fidelity for personnel detection
− Conducted research on game fuzzing and its application for random search in infinite spaces
− Conducted research on statistical modeling of sensor data, cross analysis using complementary sensors and predicting future patterns of interest

- 08/2008-06/2011: Research Associate (Faculty), The Pennsylvania State University, Applied Research Laboratory

− Conducted research on self-adapting network controller, data fusion, and tracking in wireless sensor networks and heterogeneous sensor networks
− Leading designer and software programmer for a NS-2 simulator of a large-scale sensor network deployed in urban environments
− Conducted research on event-driven cluster formation on ad hoc and mobile wireless networks

− Leading designer and software programmer for NS-2-based simulator and C++ software for adaptive transmission rate among sensors in a cluster based on TCP/IP queue capacity
− Conducted research scale-free graphs and secure multi-hop communication
− Conducted research and produce Java-based simulator for dynamic spectrum allocation in wireless sensor network clusters

• 01/2007-08/2008: Research Associate, The University of Texas at Dallas, Department of Computer Science
− Conducted research on energy efficient broadcasting and multicasting for wireless sensor networks; self-organizing, self-adapting, self-healing wireless sensor networks
− Conducted research on attack graphs, graph embedding, channel modeling for embedded communication protocols

• 08/2006-11/2006: Visiting Scholar, Osaka University, Japan
− Conducted research on self-stabilizing algorithms
− Conducted research on fault tolerant ring embedding on asynchronous systems

• 08/1999-05/2006: Teaching/Research Assistant, University of Nevada, Las Vegas, School of Computer Science
− Conducted research Internet forensics & network security
− Leading designer & software programmer for an FBI project on sniffing web packets
− Instructor for CSC 119, C for Scientist (Summer 2003, Summer 2004)
− Instructor for CSC 115, Introduction to Computers (Summer 2004)
− Instructor for Automata and Formal Languages (Fall 2001)
− TA for Automata and Formal Languages (Fall 1999, Spring & Fall 2000, Spring 2001, Spring & Fall 2003, Spring & Fall 2004, Spring & Fall 2005, Spring 2006); Introduction to Data Structures (Fall 2000, Spring 2003); Analysis of Algorithms (Spring 2001)
− Lab Instructor for Computer Science I (Fall 1999, Spring 2000)

Education
08/2001 - 05/2006: Ph.D. in Computer Science; University of Nevada, Las Vegas, USA. Title of dissertation: “Distributed stabilizing data structures”, available online at https://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=3646&context=rtds
08/1999 - 08/2001: MS in Computer Science; University of Nevada, Las Vegas, USA
10/1996 - 09/1997: MS in Computer Science; Al. I. Cuza University, Iasi, Romania
10/1991 - 05/1996: BS in Computer Science; Al. I. Cuza University, Iasi, Romania

Grants
• PI for the grant “Women in Computer Science Inclusive Excellence - CSUF Pathways, Pipeline, Practice (P-Cubed)” (March 2021-March 2023), Northeastern University, amount $650,000; co-PI Ms. Beth Harnick-Shapiro
• PI for the grant “Management of Mass Casualty via an Artificial Intelligence Based System” (April 2021-March 2023), NATO, amount 299,800 Euro; a five-country collaboration with universities or research institutions in Croatia, Germany, Moldova, and Romania
• PI for the grant “Affecting Computing Technologies on the Cloud for Safe and Pleasurable Driving” (October 2019-October 2019), amount $35,000 worth of AWS credits; co-PI Dr. Christopher Ryu

- Co-PI for the AWS credit grant "Building Capacity: Advancing Student Success in Undergraduate Engineering and Computer Science (ASSURE-US)" (October 2018- September 2023), National Science Foundation, amount $1,496,967; PI Dr. Sudarshan Kurwadkar, other co-PI: Dr. Jidong Huang, Dr. Antoinette Linton, Dr. Salvador Mayoral
- PI for GI 2025 internal grant "Interactive Teaching Using Flipped Classroom and Collaborative Assessment", amount $9500; co-PI Sandra Boulanger
- PI for the grant "FY 2017 Summer Undergraduate Research Fellowship CTL" (April-August 2017), PM: Nuria Martinez, National Institute of Standards And Technology, amount $9636
- PI for the grant "Environmental-aware Situation Assessment of Cognitive Autonomous Systems" (2016-2018), PM: Erik Blasch, Air Force Office of Scientific Research, amount $85,326
- co-PI/PI for the grant "Dynamic Data Driven Machine Perception and Learning for Border Control" (2012-2017), PM: Dr. F. Darema, Air Force Office of Scientific Research, amount $1,068,215
- PI for ARL internal grant (2010), amount $5400

Awards

- IEEE 10th Annual Computing and Communication Workshop and conference (IEEE CCWC 2019), Best Presenter Award, co-authored with N. Rale, R. Solanki, J. Andro-Vasko, W. Bein
- 9th IEEE Annual Ubiquitous Computing (UEMCON 2018), Best Paper Award, co-authored with P. Ly and A. Verma
- Girl Scouts of America: President Award (together with Beth Harnick-Shapiro and ACMW club members)
- 7th IEEE Annual Computing and Communication Workshop and Conference (IEEE CCWC 2017), Best Paper Award, Distributed System track, co-authored with N. Nguyen
- 41st Hawaii International Conference in System Sciences (HICSS 2008), Best Paper Award, Software Technology track
- 2018 Inspiring Programs in STEM Award from INSIGHT Into Diversity magazine, for Creative Coding, STEM Expo, and WICSE program together with Beth Harnick-Shapiro

Editorial Work

- Guest co-editor (with Dr. Shahram Latifi) of special issues of Information journal, on selected papers accepted at ITNG conferences (2016-present)
- Academic Editor of the Journal of Advances in Mathematics and Computer Science (former name: British Journal of Mathematics and Computer Science) (December 2012 - present)
- Associate Editor for the International Journal of Network Protocols and Algorithms - Power Efficient and Energy Saving Network Protocols and Algorithms area (May 2009 - present)
- Associate Editor for the International Journal of Machine Intelligence (October 2010 - present)
- Co-editor for a special issue of the International Journal of Bio-Inspired Computation on "Knowledge and Intelligence in Distributed Systems", vol. 5, no. 4, 2013

Memberships

- Member of ACM (2016-2017, 2018-2019)
- Member of SIAM (January 2006 - 2011)
- Member of IEEE Society (February 2005 - 2011)

- NCWIT Academic Alliance Lead Representative (April 2016-present)

Scholarships
- Great Assistantship Award (Summer 2005, Summer 2001)
- Summer Scholarship (Summer 2004)
- Merit recognition for UNLV Graduate Assistant Excellence in Teaching (Apr. 9, 2003)
- National Dean's List (Inductee 2003)
- Phi Kappa Phi, Chapter 100 (Inductee 2001)
- TEMPUS Scholarship (04/1997 - 08/1997)
- Al. I. Cuza University Scholarship (October 1991 - June 1996)

Faculty Recognitions
- Faculty Advisor of Distinction (March 2018)
- Faculty Recognition for Service (December 2017)
- IMPACT Teaching Certificate (June 2017)
- Faculty Recognition in Teaching (October 2016)
- Affordable Learning $olutions Ambassador in California State University, Fullerton campus (2016-present)
- Faculty/Graduate Student Mentorship Program Mentor (2016-present)

Service to University
- ECS Faculty liaison in the CSUF Academic Senate Assessment and Educational Effectiveness Committee (2019-2021)
- CS representative in the ECS at-large committee (2019-2021)
- Faculty Mentor of Professional Societies: ACM-W, CSUF chapter
- Member of the Computer Science Assessment committee (2015-present); Chair of the CS Assessment Committee (2017-2018)
- Member of Computer Science Instructional Resources Committee (2016-present)
- Member of the Computer Science Executive Committee (2017-present)

Book Chapters

19. P. Joshi and D. Bein, "Audible Code, a Voice-Enabled Programming Extension of Visual Studio Code", accepted at ITNG 2020

18. S. Anand, D. Bein, J. Andro-Vasko, and W. Bein, "SpeakOut, a Web App for Online Therapy and Web Counseling", accepted at ITNG 2020

17. J. Estabillo, D. Lee, C. Ly, G. Orozco, D. Bein, S. Kurwadkar, J. Huang, and Y. Bai, "Using Projects on Clustering and Linear Regression to Develop Basic Research Skills in Freshmen and Sophomore Undergraduate Students", accepted at ITNG 2020

16. A. Ahmed, L. Macias, M. McCune, M. Medina, G. Orozco, D. Bein, S. Kurwadkar, J. Huang, O. Daescu, D. Xu, and Y. Bai, "Initiating Research Skills in Undergraduate Students through Data Science Projects", accepted at ITNG 2020

15. D. Tu, D. Bein, and M. Gofman, "Designing a Unity Game Using the Haptic Feedback Gloves, VMG 30 Plus", accepted at ITNG 2020

14. C. Vielma, A. Verma, and D. Bein, "Single and Multibranch CNN-Bidirectional LSTM for IMDb Sentiment Analysis", accepted at ITNG 2020

13. P. K. Bhullar, C. Vielma, D. Bein, and V. Popa (2019) MeasureOP- Sentiment Analysis of Movies Text Data. In: S. Latifi (Editor) Information Technology - New Generations. Advances in Intelligent Systems and Computing. Advances in Intelligent Systems and Computing, Springer International Publishing, Cham, vol. 800, pages 557-562
12. R. Obidah and D. Bein (2019) Game based learning using Unreal Engine. In: S. Latifi (Editor) Information Technology - New Generations. Advances in Intelligent Systems and Computing. Advances in Intelligent Systems and Computing, Springer International Publishing, Cham, vol. 800, pages 513-519
11. J. M. Narra, D. Bein, and V. Popa (2018) Business Intelligence Dashboard Application for Insurance Cross Selling. In: S. Latifi (Editor) Information Technology - New Generations. Advances in Intelligent Systems and Computing, vol. 738, pages 427-432
10. N. R. Prabhu, J. Andro-Vasko, D. Bein and W. Bein (2018) Music Genre Classification using Data Mining and Machine Learning. In: S. Latifi (Editor) Information Technology - New Generations. Advances in Intelligent Systems and Computing, vol. 738, pages 397-403
9. N. Nguyen, D. Bein (2018) Evaluating Assignments Using Grading App. In: S. Latifi (Editor) Information Technology - New Generations. Advances in Intelligent Systems and Computing, vol. 558, DOI: 10.1007/978-3-319-54978-1_108, pages 871-875.
8. R. Cheruku, D. Bein, W. Bein, V. Popa (2018) Recruitment Drive Application. In: S. Latifi (Editor) Information Technology - New Generations. Advances in Intelligent Systems and Computing, vol. 558, DOI: 10.1007/978-3-319-54978-1_108, pages 865-870.
7. Nistor M.S., Bein D., Teodorescu H.N., Pickl S.W. (2018) Finding the Maximal Day-Time Dependent Component of a Subway System. In: Cassenti D. (eds) Advances in Human Factors in Simulation and Modeling. AHFE 2017. Advances in Intelligent Systems and Computing, vol 591. Springer, Cham, pages 562–572
6. Nistor M.S., Bein D., Bein W., Dehmer M., Pickl S. (2017) Time-Based Estimation of Vulnerable Points in the Munich Subway Network. In: Dörner K., Ljubic I., Pflug G., Tragler G. (eds) Operations Research Proceedings 2015. Operations Research Proceedings (GOR (Gesellschaft für Operations Research e.V.)). Springer, Cham
5. W. Bein and D. Bein, “Fault Tolerance and Transmission Reliability in Wireless Networks”, in Scalable Computing: Theory and Practice, John Wiley & Sons, S. U. Khan, L. Wang, and A. Y. Zomaya (Eds), January 29, 2013, pages 227-256.
4. B. Babadi, D. Bein, B.B. Madan, S. Phoha, V. Tarokh, and Y. Wen, “Improving Target Localization and Tracking by Dynamically Prioritized Frequency Band Allocation for Wireless Sensor Networks in Urban Environments,” in Distributed Sensor Networks, Second Edition: Sensor Networking and Applications, Chapman and Hall/CRC, S. S. Iyengar and R. R. Brooks (Eds), September 24, 2012, pages 499-514.
3. S. Phoha, D. Bein, Y. Wen, B.B. Madan, and A. Ray, “Dynamically Adaptive Multi-Modal Sensor Fusion in Urban Environments,” in Distributed Sensor Networks, Second Edition: Sensor Networking and Applications, Chapman and Hall/CRC, S. S. Iyengar and R. R. Brooks (Eds), September 24, 2012, pages 551-576.
2. D. Bein, “Self-configuring, self-organizing, and self-healing schemes in MANETs”, chapter 2 in Guide to Wireless Ad Hoc Networks, S. Misra, I. Woungang, and S. C. Misra (Eds), series Computer Communications and Networks, DOI 10.1007/978-1-84800-328-6 2, Springer-Verlag (London), pages 27-41, 2009.
1. D. Bein, “Self-organizing and self-healing schemes in WSNs”, chapter 11 in Guide to Wireless Sensor Networks, S. Misra, I. Woungang, and S. C. Misra (Eds), Springer, series

Computer Communications and Networks, DOI 10.1007/978-1-84882-218-4 11, Springer-Verlag (London), pages 293-308, 2009.

Peer-reviewed Journal Articles

20. J. Eapen, A. Verma, and D. Bein, "Improved big data stock index prediction using deep learning with CNN and GRU", International J. of Big Data Intelligence (2020) 7(4):202-210
19. B. B. Madan, M. Banik, and D. Bein, "Securing Unmanned Autonomous Systems from Cyber Threats", Journal of Defense Modeling and Simulation, First Published February 23, 2016 https://doi.org/10.1177/1548512916628335
18. Y. Wen, D. Bein, and S. Phoha, "Dynamic Clustering of Multi-modal Sensor Networks in Urban Scenarios", Information Fusion (2014) 15:130-140
17. S. Phoha, G. Mallapragada, Y. Wen, D. Bein, and A. Ray, "Designing a Fusion-Driven Sensor Network to Selectively Track Mobile Targets", Parallel Processing Letters (2012) 22(1), 15 pages.
16. D. Bein, H. Kakugawa, and T. Masuzawa, "Self-stabilising protocols on oriented chains with joins and leaves", International Journal of Autonomous and Adaptive Communications Systems (IJAACS) (2012) 5(2): 178-199.
15. D. Bein, T. Masuzawa, and Y. Yamauchi, "Reliable Communication on Emulated Channels Resilient to Transient Faults", International Journal of Foundations of Computer Science (IJFCS) (2011) 22(5): 1099-1122.
14. D. Bein, Y. Wen, S. Phoha, B. B. Madan, and A. Ray, "Distributed network control for mobile multi-modal wireless sensor networks," Journal of Parallel and Distributed Computing (2011) 71(3): 460-470.
13. D. Bein, A.K. Datta, and B.A. Sathyanarayanan, "Efficient Broadcasting in MANETs by Selective Forwarding", Scalable Computing: Practice and Experience (2010) 11(1):43-52.
12. Y. Yamauchi, D. Bein, T. Masuzawa, L. Morales, and I.H. Sudborough, "Calibrating Embedded Protocols on Asynchronous Systems", Information Sciences (2010) 180:1793-1801, DOI http://dx.doi.org/10.1016/j.ins.2009.08.029.
11. D. Bein and S.Q. Zheng, "An Effective Algorithm for Computing Energy-Efficient Broadcasting Trees in All-Wireless Networks", Ad Hoc & Sensor Wireless Networks (2010) 10(4): 253-265.
10. D. Bein and S.Q. Zheng, "Energy Efficient All-to-All Broadcast in All-Wireless Networks", Information Sciences (2010) 180:1781-1792, DOI http://dx.doi.org/10.1016/j.ins.2009.11.013.
9. D. Bein, W. Bein, and P. Madiraju, "The Impact of Cloud Computing on Web 2.0", Economy Informatics Journal (EIJ) (2009) 9(1):5-12.
8. W. Bein, D. Bein, and S. Malladi, "Fault Tolerant Coverage Models for Sensor Networks", International Journal of Sensor Networks (IJSNet) (2009) 5(4):199-209.
7. Y. Yamauchi, T. Masuzawa, and D. Bein, "Preserving the Fault-Containment of Ring Protocols Executed on Trees", British Computer Journal (2009) 52(4):483-498, Oxford University Press for British Computer Society.
6. D. Bein, A.K. Datta, and L.L. Larmore, "Synchronization Algorithms on Oriented Chains", Scientific Annals in Computer Science (2008) 18:13-34, Al. I. Cuza University Press.
5. D. Bein, A.K. Datta, and S. Yellenki, "Cluster-Based Route Discovery Protocol", Scalable Computing: Practice and Experience Journal (2008), Special issue on Distributed Intelligent Systems, 9(1):21-28, March 2008.

4. D. Bein, A.K. Datta, and M.H. Karaata, “An Optimal Snap-Stabilizing Multi-Wave Algorithm”, Computer Journal (2007) 50(3):332-340, Oxford University Press for British Computer Society.
3. D. Bein, A.K. Datta, and V. Villain, “Self-Stabilizing Local Routing in Ad Hoc Networks”, Computer Journal (2007) 50(2):197-203, Oxford University Press for British Computer Society.
2. D. Bein, V. Jolly, B. Kumar, and S. Latifi, “Reliability Modeling in Wireless Sensor Networks”, International Journal of Information Technology (2005) 11(2):1-8.
1. D. Bein, W. Bein, N. Brajkovska, and S. Latifi, “Optimal Embedding of Honeycomb Networks into Hypercubes”, Parallel Processing Letters (2004), 14(3 & 4):367-375, September-December 2004.

Articles in Peer-reviewed Conference Proceedings

74. R.R. Shetty, D. Bein, M.S. Nistor, and S. Pickl, "Semiotic Recognition System", accepted at IEEE CCWC 2021
73. V. Maniyar, D. Bein, M.S. Nistor, and S. Pickl, "Drug Safety Intelligence and Automation", IEEE CCWC 2021, accepted at IEEE CCWC 2021, Best presenter award
72. J.V. Dirisam, D. Bein and A. Verma, "Predictive Analytics of Donors in Crowdfunding Platforms: A Case Study on Donorschoose.org", accepted at IEEE CCWC 2021, Best presenter award
71. X. Suo, O. Glebova, D. Liu, A. Lazar, and D. Bein, "A Survey of Teaching PDC Content in Undergraduate Curriculum", accepted at IEEE CCWC 2021
70. A. Ramesh, S.P. Nagisetti, N. Sridhar, K. Avery, and D. Bein, "Station-Level Demand Prediction for Bike-Sharing System", accepted at IEEE CCWC 2021
69. R. Jhangiani, A. Verma, D. Bein, “Machine Learning Pipeline for Fraud Detection and Prevention in E-Commerce Transactions”, IEEE UEMCON 2019
68. N. Rale, R. Solanki, D. Bein, J. Andro-Vasko, W. Bein, “Prediction of Crop Cultivation”, 2019 IEEE CCWC, Best presenter award
67. S. Solanki, R. H. Ravilla, D. Bein, “Study of Distributed Framework Hadoop and Overview of Machine Learning using Apache Mahout”, 2019 IEEE CCWC
66. A. Jeerige, D. Bein, and A. Verma, “Comparison of Deep Reinforcement Learning Approaches for Intelligent Game Playing”, 2019 IEEE CCWC
65. J. Eapen, D. Bein, and A. Verma, “Novel Deep Learning Model with CNN and Bi-Directional LSTM for Improved Stock Market Index Prediction”, 2019 IEEE CCWC
64. T. Abrahams and D. Bein, “Analyzing Beauty by Building Custom Profiles Using Machine Learning”, 2019 IEEE CCWC
63. P. Ly, D. Bein, and A. Verma, “New Compact Deep Learning Model for Skin Cancer Recognition”, IEEE UEMCON 2018, Best paper award
62. S. Pickl, S. Nistor, C. Gaindric, S. Cojocaru, I. Secrieru, O. Popcova, D. Bein, and D. Cimpoesu, "Concept of Decision Support Framework for Management of Mass Casualty Situations at Collections Points", 2018 MFOI
61. N. Ang, D. Bein, D. Dao, L. Sanchez, J. Tran, and N. Vurdien, “Emotional Prosody Analysis on Human Voices”, 2018 IEEE CCWC, pages 737-741
60. J. Ligon, D. Bein, P. Ly, B. Onesto, “3D Point Cloud Processing Using Spin Images for Object Detection”, 2018 IEEE CCWC, pages 731-736
59. V. Ramappa and D. Bein, “MusiqGlobe.fm using MEAN Stack”, 2018 IEEE CCWC

58. N. Pandey and D. Bein," Web Application for Social Networking using RTC", 2018 IEEE CCWC, pages 661-664
57. N. Nguyen, and D. Bein, "Distributed MPI Cluster with Docker Swarm Mode", Proceedings of 7th IEEE Annual Computing and Communication Workshop and Conference (IEEE CCWC 2017), pages 447-453, 2017, Best Paper Award, Distributed Systems track
56. S. Ricardo, D. Bein and A. Panangadan, "Low-Cost, Real-Time Obstacle Avoidance for Mobile Robots", Proceedings of 7th IEEE Annual Computing and Communication Workshop and Conference (IEEE CCWC 2017), pages 788-794, 2017.
55. B. Madan, M. Banik, B.C Wu, and D. Bein, "Intrusion Tolerant Multi-Cloud Distributed Storage ", Proceedings of IEEE SmartCloud 2016, November 18-20, 2016, New York City
54. D. Bein and B. Madan, "Reducing the Data Communication Delay in Wireless Sensor Networks", Proceedings of 2016 IEEE 12th International Conference on Intelligent Computer Communication and Processing, pages 361-368, Sept 8 - 10, 2016, Cluj-Napoca, Romania
53. B. Madan and D. Bein, "Optimal Maximum Likelihood Estimates of Data Fusion in a Distributed Network of Sensors", Proceedings of 2016 IEEE 12th International Conference on Intelligent Computer Communication and Processing, pages 369-375, Sept 8 - 10, 2016, Cluj-Napoca, Romania
52. W. Bein, B. Madan, D. Bein, and D. Nyknahad, "Algorithmic Approaches for a Dependable Smart Grid", Proceedings of 13th International Conference on Information Technology: New Generations (ITNG 2016), Springer, Volume 448 of the series Advances in Intelligent Systems and Computing, pages 677-687
51. M. S. Nistor, D. Bein, W. Bein, M. Dehmer, and S. Pickl, "Time-Based Estimation of Vulnerable Points in the Munich Subway Network", Post-conference proceedings of the International Conference on Operations Research (OR 2015), accepted on March 14, 2016, to be published by Springer-Verlag
50. B. B. Madan, D. Bein, "MOE Quantification of Missions Using Sensor Data Driven Graph Similarity Measures", 47th Annual Simulation Symposium (ANSS), Spring Simulation Multi-conference 2015, April 12-15, 2015, Alexandria, VA
49. D. Bein, W. Bein, A. Karki, B.B. Madan, "Optimizing Border Patrol Operations Using Unmanned Aerial Vehicles", 12th International Conference on Information Technology: New Generations (ITNG 2015), IEEE, pages 479-484
48. D. Bein, B.B. Madan, S. Phoha, S. Rajtmajer, and A. Rish, "Dynamic Data-driven Sensor Network Adaptation for Border Control", SPIE Defense Security and Sensing, April 29-May 3, 2013, vol. 8711.
47. M. Jones, D. Bein, B. Madan and S. Phoha, "Increasing the Network Capacity for Multi-modal Multi-hop WSNs through Unsupervised Data Rate Adjustment," Intelligent Distributed Computing Conference (IDC 2011), October 5-7, 2011, Delft, Netherlands, F.M.T. Brazier et al. (Eds.), Springer-Verlag, Studies in Computational Intelligence, vol. 382, pp. 183-193.
46. D. Bein, W. Bein and S. Venigella, "Cloud Storage and Online Bin Packing," Intelligent Distributed Computing Conference (IDC 2011), October 5-7, 2011, Delft, Netherlands, F.M.T. Brazier et al. (Eds.), Springer-Verlag, Studies in Computational Intelligence, vol. 382, pp. 63-68.
45. D. Bein and S.Q. Zheng, "A New Model for Energy-Efficient All-Wireless Networks," Intelligent Distributed Computing Conference (IDC 2011), October 5-7, 2011, Delft, Netherlands, F.M.T. Brazier et al. (Eds.), Springer-Verlag, Studies in Computational Intelligence, vol. 382, pp. 171-181.

44. Y. Yamauchi, T. Masuzawa and D. Bein, “Adaptive Containment of Time-Bounded Byzantine Faults”, 12th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), September 20-22, 2010, New York City, NY.
43. B.B. Madan, B.C. Wu, S. Phoha, and D. Bein, “Modeling and Simulation of Failure Tolerance in Scale Free Networks”, Winter Simulation Conference, Baltimore, MD, December 2010.
42. G. Mallapragada, Y. Wen, S. Phoha, D. Bein and A. Ray, “Tracking Mobile Targets using Wireless Sensor Networks”, 7th International Conference on Information Technology: New Generations, April 12-14, 2010, Las Vegas, Nevada, USA.
41. Y. Wen, D. Bein and S. Phoha, “Middleware for Heterogeneous Sensor Networks in Urban Scenarios”, 7th International Conference on Information Technology: New Generations, April 12-14, 2010, Las Vegas, Nevada, USA.
40. D. Bein, W. Bein and S. Phoha, “Efficient Data Centers, Cloud Computing in the Future of Distributed Computing”, 7th International Conference on Information Technology: New Generations, April 12-14, 2010, Las Vegas, Nevada, USA.
39. B. Chitturi, D. Bein, and N. Grishin, “Complete Enumeration of Compact Structural Motifs in Proteins”, ACM First International Symposium on Bio Computing (ISB 2010), February 15-17, 2010, Calicut, Kerala, India.
38. D. Bein, T. Masuzawa, and Y. Yamauchi, “Reliable Communication on Emulated Channels Resilient to Transient Faults”, Second International Workshop on Reliability, Availability, and Security (WRAS 2009), Hiroshima, Japan, December 2009, pp. 366-371.
37. D. Bein, A.K. Datta, and B.A. Sathyanarayanan, “Efficient Broadcasting by Selective Forwarding”, International Symposium on Intelligent Distributed Computing (IDC 09), October 13-14, 2009, Ayia Napa, Cyprus, Springer-Verlag Berlin, Studies in Computational Intelligence, vol. 237, pp. 43-52.
36. D. Bein, W. Bein, and P. Madiraju, “Cloud Computing and the Future of Web”, Ninth International Conference on Informatics in Economy (IE), Bucharest, Romania, May 7-8, 2009.
35. D. Bein, A.K. Datta, P. Sajja, and S.Q. Zheng, “Impact of Variable Transmission Range in All- Wireless Networks”, 42nd Hawaii International Conference in System Sciences (HICSS), January 5-8, Waikoloa, Hawaii, 2009, pp. 1-10.
34. D. Bein, A.K. Datta, and L.L. Larmore, “Local Synchronization on Oriented Rings”, 10th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), Detroit, Michigan, November 21-23, 2008, Springer-Verlag, LNCS 5340, pp. 141-155.
33. Y. Yamauchi, D. Bein. and T. Masuzawa, “Minimizing the Message Complexity on Embedded Protocols” (poster), 10th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), Detroit, Michigan, November 21-23, 2008.
32. D. Bein and S.Q. Zheng, “Approximating All-to-all Broadcast in Wireless Networks”, International Symposium on Intelligent Distributed Computing (IDC), Catania, Italy, September 18-19, 2008, pp. 65-74.
31. Y. Yamauchi, D. Bein, T. Masuzawa, L. Morales, and H.I. Sudborough, “Calibrating an Embedded Protocol on an Asynchronous System”, International Symposium on Intelligent Distributed Computing (IDC), Catania, Italy, September 18-19, 2008, pp. 227-236.
30. D. Bein, A.K. Datta, and L.L. Larmore, “Self-stabilizing Synchronization Algorithms on Oriented Chains”, IEEE 4th International Conference on Intelligent Computer Communication and Processing (ICCP), Cluj-Napoca, Romania, August 28-30, 2008, pp. 303-306.

29. D. Bein and W. Bein, “Wireless Communication in Ubiquitous Environments, an Easy Target to Attacks”, 7th International Conference on Networking in Education and Research (RoEduNet), Cluj-Napoca, Romania, August 28-30, 2008, UT Press, ISBN 978-973-662-393-6, pp. 17-20.
28. D. Bein and S.Q. Zheng, “An effective algorithm for computing energy-efficient broadcasting trees in all-wireless networks”, Workshop on Wireless Ad Hoc and Sensor Networks (WWASN), Beijing, China, June 20, 2008, pp. 273-278.
27. D. Bein, A.K. Datta, and L.L. Larmore, “Self-stabilizing algorithms for sorting and heapification”, IEEE International Parallel & Distributed Processing Symposium (IPDPS), Miami, Florida, April 14-17, 2008, pp. 1-12.
26. Y. Yamauchi, T. Masuzawa, and D. Bein, “Ring embedding preserving the fault-containment”, Proceedings of the 7th International Conference on Applications and Principles of Information Science (APIS), 2008, pp. 43-46.
25. D. Bein, “Fault-tolerant k-fold Pivot Routing in Wireless Sensor Networks”, Proceedings of the 41st Hawaii International Conference in System Sciences (HICSS), Waikoloa, Hawaii, January 7-10, 2008, IEEE Computer Press, pp. 245, Best Paper Award, Software Technology track.
24. D. Bein, W. Bein, Z. Meng, L. Morales, C. Shields Jr., and H.I. Sudborough, “Clustering and the biclique partition problem”, Proceedings of the 41st Hawaii International Conference in System Sciences (HICSS), Waikoloa, Hawaii, January 7-10, 2008, IEEE Computer Press, pp. 235.
23. D. Bein, W. Bein, and K. Adusumilli, “A Genetic Algorithm for the Two Machine Flow Shop Problem”, Proceedings of the 41st Hawaii International Conference in System Sciences (HICSS), Waikoloa, Hawaii, January 7-10, 2008, IEEE Computer Press, pp. 33.
22. D. Bein, A.K. Datta, and S. Yellenki, “Cluster-Based Route Discovery Protocol”, First International Symposium on Intelligent and Distributed Computing (IDC), Craiova, Romania, October 18-20, 2007, Springer Verlag, Studies in Computational Intelligence, vol. 78, pp. 53-62.
21. D. Bein, V. Jolly, and L. Morales, “Location Management and Cost Planning for Personal Communication Systems”, Fourth IFAC Conference on Management and Control of Production and Logistics (IFAC MCPL), September 27-30, 2007, ISBN 978-973-739-481-1, pp. 683-688.
20. D. Bein, W. Bein, M. Brut, and A.M. Cazacu, “Why is hard to patent an invention”, Eighth International Conference on Informatics in Economy (IE), Bucharest, Romania, May 17-18, 2007, ASE Printing House, pp. 133-138, ISBN 978-973-594-921-1
19. D. Bein, A.K. Datta, and L.L. Larmore, “On Self-Stabilizing Search Trees”, 20th International Symposium on Distributed Computing (DISC), Stockholm, Sweden, September 18-20, 2006, Springer Verlag, Lecture Notes in Computer Science, vol. 4167, pp. 76-89.
18. D. Bein, A.K. Datta, and L.L. Larmore, “Self-Stabilizing Space Optimal Synchronization Algorithms on Trees”, 13th Colloquium on Structural Information and Communication Complexity (SIROCCO), Chester, UK, July 3-5, 2006, pp. 334-348.
17. D. Bein, W. Bein, V. Jolly, and S. Latifi, “Web Spoofing and phishing attacks on the Internet”, 5th International Conference on Networking in Education and Research (RoEduNet), Sibiu, Romania, June 1-3, 2006, Remus Brad (Ed.), Lucian Blaga University Press, ISBN (10) 973-739-277-9, pp. 106-109.
16. V. Jolly and D. Bein, “Optical Network Evolution - SONET & DWDM”, 5th International Conference on Networking in Education and Research (RoEduNet), Sibiu, Romania, June 1-3, 2006, Remus Brad (Ed.), Lucian Blaga University Press, ISBN (10) 973-739-277-9, pp. 162-165.

15. D. Bein, A.K. Datta, and V. Villain, “Self-Stabilizing Pivot Interval Routing in General Networks”, International Symposium on Parallel Architectures, Algorithms, and Networks (ISPAN), Las Vegas, Nevada, December 7-9, 2005, pp. 282-287. Acceptance rate: 33%.
14. D. Bein, A.K. Datta, C. Jagganagari, and V. Villain, “A Self-stabilizing Link-Cluster Algorithm in Mobile Ad Hoc Networks”, International Symposium on Parallel Architectures, Algorithms, and Networks (ISPAN), Las Vegas, Nevada, December 7-9, 2005, pp. 436-441.
13. D. Bein, A.K. Datta, and V. Villain, “Snap-stabilizing Optimal Binary Search Tree”, Seventh International Symposium on Self Stabilizing Systems (SSS), Barcelona, Spain, October 26-27, 2005, pp. 1-17.
12. D. Bein, A.K. Datta, and V. Villain, “Self-stabilizing optimal local routing in ad hoc networks”, Third International Workshop on Mobile and Distributed Systems (MDC), June 10, 2005, Proceedings of the ICDCS Workshops, vol. 6, pp. 564-570.
11. D. Bein, A.K. Datta, M.H. Karaata, and S. Zaman, “An Optimal Snap-Stabilizing Multi-Wave Algorithm”, Fourth International Workshop on Assurance in Distributed Systems and Networks (ADSN), June 6, 2005, Proceedings of ICDCS Workshops, vol. 6, pp. 35-41.
10. D. Bein, A.K. Datta, M.H. Karaata, and S. Zaman, “Snap-Stabilizing k-Wave Synchronizer for Rooted Tree”, International Conference on Computational Science (ICCS), Atlanta, Georgia, May 22-25, 2005, vol. 1, pp. 560-567.
9. D. Bein, W. Bein, and S. Malladi, “Fault Tolerant Coverage Model for Sensor Networks”, International Conference on Computational Science (ICCS), Atlanta, Georgia, May 22-25, 2005, vol. 2, pp. 535-542.
8. D. Bein and A.K. Datta, “A Self-Stabilizing Directed Diffusion Protocol for Sensor Networks”, Mobile and Wireless Networks Workshop (MWN), Montreal, Canada, August 15, 2004, Proceedings of the 2004 ICPP Workshops, IEEE Computer Society, pp. 69-76.
7. D. Bein, B. Kumar, V. Jolly, and S. Latifi, “On Reliability Concerns in Wireless Sensor Networks”, International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA), Las Vegas, Nevada, June 21-24, 2004, CSREA Press, vol. 3, pp. 1043-1048.
6. D. Bein and A.K. Datta, “Self-Stabilizing Directed Diffusion Protocol in Sensor Networks”, International Conference on Computational Science (ICCS), Krakow, Poland, June 6-9, 2004, Springer- Verlag, Lecture Notes in Computer Science (LNCS), vol. 3039, pp. 1233-1240.
5. D. Bein, A.K. Datta, V. Jolly, and S. Latifi, “Bluetooth, the Tool for a Seamless Internet?”, 3rd Annual International Conference on Networking in Education and Research (RoEduNet), Timisoara, Romania, May 27-28, 2004, Transactions on Automatic Control and Computer Science, volume 49(63), pp. 15-28.
4. D. Bein, W. Bein, V. Jolly, and S. Latifi, “Privacy and Security on Internet: Virtual Private Networks”, 3rd Annual International Conference on Networking in Education and Research (RoEduNet), Timisoara, Romania, May 27-28, 2004, Transactions on Automatic Control and Computer Science, volume 49(63), pp. 39-42.
3. D. Bein, N. Brajkovska, and S. Latifi, “Embedding of Honeycomb Mesh Networks into Hyper- cubes”, International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA), Las Vegas, Nevada, June 23-26, 2003, CSREA Press, vol. 2, pp. 871-876.
2. D. Bein and A.K. Datta, “Anonymators: Privacy and Security on the Internet”, 2nd Annual International Conference on Networking in Education and Research (RoEduNet), Iasi, Romania, June 5-6, 2003, pp. 10-14.

1. D. Bein, A.K. Datta, and V. Villain, “Self-Stabilizing Routing Protocol for General Networks”, 2nd Annual International Conference on Networking in Education and Research (RoEduNet), Iasi, Romania, June 5-6, 2003, pp. 15-22.

Service to Profession

- General vice-chair for the 18th International Conference on Information Technology: New Generations (ITNG) 2021 (www.itng.info), to be held in Las Vegas, Nevada, April 11-14, 2021.
- General vice-chair for the 17th International Conference on Information Technology: New Generations (ITNG) 2020 (www.itng.info), held in Las Vegas, Nevada, April 5-8, 2020.
- General vice-chair for the 16th International Conference on Information Technology: New Generations (ITNG) 2019 (www.itng.info), held in Las Vegas, Nevada, April 1-3, 2019.
- Publicity co-chair for the Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2020 (Nov. 18-21, Austin, USA), 2018 (Nov 4 - Nov 7, 2018, Tokyo, Japan)
- General vice-chair for the 15th International Conference on Information Technology: New Generations (ITNG) 2018 (www.itng.info), held in Las Vegas, Nevada, April 16-18, 2018.
- Publication chair for the 2018 International Conference of Distributed Computing and Networking (ICDCN) conference and affiliated workshops, held in Varanasi, India, January 4-7, 2018; papers were published by ACM
- Publicity co-chair for the International Conference of Distributed Computing and Networking (ICDCN) 2018
- Publicity co-chair for the Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2017, Boston, MA, USA
- General vice-chair for the 14th International Conference on Information Technology: New Generations (ITNG) 2017 (www.itng.info), to be held in Las Vegas, Nevada, between April 10-12, 2017.
- Session chair for two sessions at IEEE CCWC 2019
- Session chair for three sessions at ITNG 2018
- Session chair for two sessions at IEEE CCWC 2018
- Session chair for three sessions at ITNG 2017
- Session chair for one session at IEEE CCWC 2017
- Publicity co-chair for the International Conference of Distributed Computing and Networking (ICDCN) 2017, held in Hyderabad, India, between January 4-7, 2017
- Session chair for two sessions at 13th International Conference on Information Technology: New Generations (ITNG) 2016, Las Vegas, NV, USA
- Publicity co-chair for the 16th International Conference on Distributed Computing and Networking (ICDCN) 2015, Goa, India
- Publicity co-chair for the Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2013, Osaka, Japan
- Publicity co-chair for the Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2011, Shinagawa (Tokyo), Japan
- Publicity Chair for the Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2010, New York, USA
- Steering Committee Member for The Second International Conference on Networks & Communications (NeCoM-2010), Chennai, India

- Publicity Chair for Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2009, Lyon, France
- Poster co-chair for Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2008, Detroit, MI, USA
- Session chair for Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2008, Detroit, MI, USA
- Session chair for International Symposium on Intelligent Distributed Computing (IDC) 2008, Catania, Italy
- Plenary speaker at International Workshop on Mobility, Algorithms, Graph Theory in Dynamic Networks (IMAGINE) 2007, Limassol, Cyprus
- Invited speaker at the First Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 2007), Games on Graphs track, Banff, Canada
- Finance and Registration chair for the International Symposium on Parallel Architecture and Networks (ISPAN) 2005, Las Vegas, NV, USA
- Session Chair for session 6B, Ad hoc and Sensor Networks, for the International Symposium on Parallel Architecture and Networks (ISPAN) 2005, Las Vegas, NV, USA
- Session Chair for session M10, Networks and Distributed Algorithms, at the International Conference on Computational Science (ICCS) 2005, Atlanta, GA, USA

Conferences - Program Committee Member

- Technical program committee (TPC) for World AI IoT Congress 2021 to be held 10th -13th May 2021, Seattle USA
- TPC of IRTM 2021 (26 -28 February, Kolkata, India)
- TPC of CCWC 2021 (27^{th}-30^{th} January, 2021, Las Vegas, USA)
- TPC of IEEE UEMCON 2020, UEMCON 2019 (October, New York City)
- TPC of IEMCON 2020
- TPC of IEMTRONICS 2020
- TPC of IWAIVN 2020
- TPC of the IDC 2020, IDC 2019
- TPC of ITNG 2020, 2019, 2018, 2017 general track; co-chair of the poster track at ITNG 2020, 2019, 2018; co-chair of Education track at ITNG 2020
- TPC of ICDCN 2018, Varanasi, India, January 4-7, 2018
- 14th International Symposium on Pervasive Systems, Algorithms, and Networks (I-SPAN 2017), the track "Distributed algorithms and graph computing", 21-23 June 2017, Exeter, UK
- 11th International Symposium on Intelligent Distributed Computing (IDC 2017), October 11-13, 2017 in Belgrade, Serbia
- track "Distributed algorithms and graph computing" of the 14th International Symposium on Pervasive Systems, Algorithms, and Networks (I-SPAN 2017), 21-23 June, 2017 in Exeter UK
- 10th International Symposium on Intelligent Distributed Computing (IDC 2016), October 10-12, 2016, in Paris, France
- 9th International Symposium on Intelligent Distributed Computing (IDC 2015), October 7- 9, 2015, in Guimaraes, Portugal
- 8th International Symposium on Intelligent Distributed Computing (IDC 2014), September 3-5, 2014 at Madrid, Spain

- 6th International Conference on Internet and Distributed Computing Systems (IDCS 2013), 28-30 October 2013, Hangzhou, China
- Program Committee of the IADIS Theory and Practice in Modern Computing (TPMC 2013), July 22-24, Prague, Czech Republic
- 7th International Symposium on Intelligent Distributed Computing (IDC 2013), September 4-7, 2013, Prague, Czech Republic
- 3rd International Conference on Computer and Management (CAMAN 2013), March 10-13, 2013, Wuhan, China
- 5th International Conference on Internet and Distributed Computing Systems (IDCS 2012), 21-23 November 2012, Wu Yi Shan, China
- 6th International Symposium on Intelligent Distributed Computing (IDC 2012), September 24-26, 2012, Calabria, Italy
- 4th International Workshop on Internet and Distributed Computing Systems (IDCS 2011), October 24-26, 2011, Melbourne, Australia
- 5th International Symposium on Intelligent Distributed Computing (IDC 2011), October 5-7, 2011, Delft, The Netherlands
- 13th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2011), Stabilization track, to be held in Shinagawa (Tokyo), Japan, 4-7 October 2011
- 3rd International Workshop on Middleware Engineering (ME 2011), to be held in conjunction with COMPSAC 2011
- 2nd International Symposium on Middleware and Network Applications (MNA 2011), Las Vegas, NV, April 11-13, 2011
- 14th International Conference On Principle Of DIstributed Systems (OPODIS 2010), Tozeur, Tunisia, December 2010
- 3rd IEEE International Workshop on Internet and Distributed Computing Systems (IDCS'10), held in conjunction with the 12th IEEE International Conference on High Performance Computing and Communications (HPCC), Melbourne, Australia, September 1-3, 2010
- 2nd IEEE International Workshop on Middleware Engineering (ME 2010), held in conjunction with 34th IEEE Computer Software and Applications Conference (COMPSAC 2010), Seoul, Korea, July 19-23, 2010
- The Second International Conference on Networks & Communications (NeCoM-2010) Chennai, India, 20-22, August, 2010
- The Third International Conference on Network Security & Applications (CNSA-2010), Chennai, India, July 23-25, 2010
- Fourth International Symposium on Intelligent Distributed Computing (IDC) 2010, Tangier, Morocco, September 16-18, 2010
- The Second International Conference on Wireless & Mobile Networks (WiMo-2010), June 26-28, 2010, Ankara, Turkey
- Second International Workshop on Computer Networks & Communications (CoNeCo-2010), held in conjunction with WiMo 2010, June 26-28, 2010, Ankara, Turkey
- International Workshop on Mobility, Algorithms, Graph Theory in Dynamic Networks (IMAGINE) 2010
- The First International Conference on Networks and Communications (NetCoM-2009), Chennai, India, December 27-29, 2009

- The Second International Workshop on Internet and Distributed Computing Systems (IDCS) 2009, to be held in conjunction with The Second International Conference on Computer Science and its Applications (CSA) 2009, December 10-12, 2009, Jeju Island, Korea
- The First International Workshop on Wireless & Mobile Networks (WiMo) 2009, held in conjunction with The Sixth International Conference on Ubiquitous Intelligence and Computing (UIC) 2009, Brisbane, Australia, July 7-10, 2009
- The First International Workshop on Networks and Communications (NeCoM-2009), held in conjunction with the 3rd International Conference on New Trends in Information and Service Science (NISS) 2009, Beijing, China, June 30-July 2, 2009
- 1st IEEE International Workshop on Middleware Engineering (ME) 2009, held in conjunction with 33rd IEEE Computer Software and Applications Conference (COMPSAC) 2009, Seattle, Washington, July 20, 2009
- International Workshop on Mobility, Algorithms, Graph Theory in Dynamic Networks (IMAGINE) 2009, Piran, Slovenia, May 28, 2009
- Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2009, Stabilization track, Detroit, Michigan, USA, November 21-23, 2009
- Third International Symposium on Intelligent Distributed Computing (IDC) 2009, Catania, Italy, September 18-19, 2009
- Richard Tapia Celebration of Diversity in Computing Conference 2009, Portland, Oregon, USA, April 1-4, 2009
- Hawaii International Conference in System Sciences (HICSS) 2009, Algorithmic Challenges in Emerging Applications of Computing, minitrack of Software Technology track, Waikoloa, Big Island, Hawaii, USA, January 6, 2009
- International Workshop on Mobility, Algorithms, Graph Theory in Dynamic Networks (IMAGINE) 2008, Reykjavik, Iceland, July 12, 2008
- Hawaii International Conference in System Sciences (HICSS) 2008, Algorithmic Challenges in Emerging Applications of Computing, minitrack of Software Technology track, Waikoloa, Big Island, Hawaii, USA, January 8, 2008
- Symposium on Applied Computing (SAC) 2008, Middleware Engineering track, Fortaleza, Ceara, Brazil, March 16-20, 2008
- International Workshop on Intelligent Pervasive Middleware (IPM) 2007, held in conjunction with The 2007 International Conference on Intelligent Pervasive Computing (IPC-07), Jeju Island, Korea, October 11, 2007
- Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS) 2007, Paris, France, 14-16 November 2007
- Workshop on Reliability, Availability, and Security (WRAS) 2007, held in conjunction with SSS 2007, Paris, France, November 16, 2007
- Richard Tapia Celebration of Diversity in Computing Conference (TAPIA) 2007, Orlando, Florida, USA, October 14-17, 2007

Presentations & Invited Talks

- "Reducing the Data Communication Delay in Wireless Sensor Networks", presentation given at Universitaet der Bunderwehr Muenchen, Germany, on June 6, 2017; invited talk

- "Distributed Computing", presentation given at California State University, Fullerton, Fullerton, CA, on May 11, 2015 and at Mount St. Mary University, Los Angeles, CA, on March 23, 2015
- Interfaces and Polymorphism, presentation given online to Western Governors University, on April 21, 2015
- "Introduction to Programming", presentation given at California Baptist University, Riverside, CA, on March 31, 2015
- "Collaboration through Communication in Wired and Wireless Environments", presentation given at Northern Arizona University, Flagstaff, AZ, on March 25, 2013.
- "Dynamic Data Driven Adaptation Tools", presentation given at Global Horizons Air Domain and Logistic/Transportation Summit, Dayton, Ohio, on March 20, 2013.
- "MinMax Model for Energy-Efficient All-Wireless Networks", presentation given at The University of Nevada, Las Vegas, NV, on April 14, 2009.
- "Hard Problems for Wireless Networks", presentation given at The University of Texas at Brownsville, TX, on March 9, 2009.
- "Self-configuring, Self-organizing, and Self-healing Schemes in MANETs", presentation given at Oklahoma City University, OK, on June 25, 2008.
- "Hard Problems for Wireless Networks", presentation given at Applied Research Laboratory, The Pennsylvania State University, University Park, PA, on June 19, 2008.
- "Hard Problems for Wireless Networks", Plenary presentation for IMAGINE 2007, Limassol, Cyprus, on September 27, 2007.
- "On Self-Stabilizing Search Trees", Invited presentation for CANADAM 2007, Banff, Canada, on May 29, 2007.
- "Self-Stabilizing Local Routing in Ad Hoc Networks", presentation given at City University of Hong Kong, Hong Kong, China, on December 12, 2006.
- "Self-Stabilizing Local Routing in Ad Hoc Networks", presentation given at Osaka University, October 18, 2006.
- "On Self-Stabilizing Search Trees", presentation given at Osaka University, Osaka, Japan, on August 30, 2006.
- Presented full-length papers at ITNG 2018, CCWC 2018, AHFE 2017, ITNG 2017, CCWC 2017, ITNG 2016, ITNG 2010, HICSS 2009, SSS 2008, IDC 2008, IPDPS 2008, HICSS 2008, IDC 2007, MCPL 2007, DISC 2006, SIROCCO 2006, ISPAN 2005, SSS 2005, ADSN 2005, MDC 2005, ICCS 2005, MWN 2004, RoEduNet 2004, ICCS 2004, RoEduNet 2003

Reviewer for Conferences and Journals

- International Conference of Distributed Computing and Networking (ICDCN 2018)
- International Conference on Information Technology: New Generations (ITNG) 2017-2020
- Annual International Conference on Combinatorial Optimization and Applications (COCOA) 2017, 2016, 2015
- International Multi-Conference on Complexity, Informatics and Cybernetics (IMCIC 2016)
- International Symposium on Intelligent Distributed Computing 2009-2016
- IEEE - RIVF International Conference on Computing and Communication Technologies 2016, 2015, 2012
- International Conference on Interactive Mobile Communication, Technologies and Learning (IMCL 2016)

- Journal of Circuits, Systems, and Computers 2015
- International Journal of Distributed Sensor Networks 2011-2016
- 46th Hawaii International Conference on System Sciences (HICSS 2013)
- Journal of Bio-inspired Computation 2012
- IEEE Transactions on Signal Processing 2012
- Transactions of the Society for Modeling and Simulation International 2012
- 2nd International Conference on Computer Science, Engineering and Applications (ICCSEA-2012), May 25-27, 2012, Delhi, India
- International Journal of Computer Science, Engineering and Applications (IJCSEA) 2012
- British Journal of Mathematics and Computer Science 2011
- IEEE Transactions on Multimedia 2011, 2012
- Journal of Parallel and Distributed Computing (JPDC) 2011, 2012
- Sensors (open access journal) 2011, 2012, 2013
- Concurrency and Computation: Practice and Experience journal 2011
- International Journal of Ad Hoc and Ubiquitous Computing (IJAHUC) 2009
- IEEE Transactions on Parallel and Distributed Systems 2009
- IEEE Transactions on Computers 2009
- 20th International Symposium on Algorithms and Computation (ISAAC) 2009
- Theoretical Computer Science 2009, 2010, 2012
- Journal of Information Sciences (INS) 2009
- Information Processing Letters (IPL) 2010, 2009
- British Computer Journal (CJ) 2008
- Discrete Applied Mathematics (DAM) 2008, 2007
- Symposium on Self-Stabilizing Systems (SSS) 2005-2008
- International Journal of Computer Mathematics (IJCM) 2009, 2008
- International Journal of Information Technology (IJIT) 2008
- Parallel Processing Letters (PPL) 2008
- Computer Communications (CompCom) 2007-2010
- First International Conference on Computer Science, Engineering and Information Technology (CCSEIT-2011)
- International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN) 2008
- The 2nd International Conference on Engineering and Meta-Engineering (ICEME 2011)
- Transactions on Autonomous and Adaptive Systems (TAAS) 2007
- 11th International Conference On Principles Of Distributed Systems (OPODIS) 2007
- Workshop on Reliability, Availability, and Security (WRAS) 2007
- Richard Tapia Celebration of Diversity in Computing Conference (TAPIA) 2007
- IEEE International Parallel and Distributed Processing Symposium (IPDPS) 2006
- International Conference on Distributed Computing and Internet Technology (ICDCIT) 2005
- International Conference on High Performance Computing (HiPC) 2005
- Mobile and Distributed Computing Workshop (MDC) 2005
- Information and Knowledge Engineering (IKE) 2003
- Journal of Parallel and Distributed Computing (JPDC), vol. 62, issue 5 (May 2002), Special Issue on Self-Stabilizing Distributed Systems.

CURRICULUM VITAE

Revised: June 2021

NING CHEN

Professor
Department of Computer Science
California State University, Fullerton
Fullerton, CA 92834

PROFESSIONAL INTERESTS

Software Testing (SQA, V&V, Testing), Software Architecture, Full Stack Web Development (Front-End, React, Backend, Django, Nodejs) Embedded Systems (AWS IoT, freeRTOS), Formulation, Integration and Supervision of Multi-disciplinary Research and Development (Microgrid).

EDUCATION

Ph.D., Electrical Engineering, Colorado State University,Fort Collins, Colorado, 1986.
M.S., Electrical Engineering, Colorado State University,Fort Collins, Colorado, 1984.
B.S., Hydraulics Engineering, National Cheng KungUniversity, Tainan, Taiwan, ROC, 1978.

PROFESSIONAL AND RESEARCH EXPERIENCE

1999 - Present	Professor, Department of Computer Science, California State University, Fullerton, California.
2014- 2017	Founding Program Coordinator, Accelerated Master in Software Engineering program, California State University, Fullerton, California.
2011 - 2014	Program Coordinator, Online Master in Software Engineering program, California State University, Fullerton, California.
2000 - 2003	Chair, Department of Computer Science, California State University, Fullerton, California.

RECENT PUBLICATIONS (Papers/Patents / Reports)

S. Cox, and N. Chen, "Improving Client Side Web Testing Automation in Continuous Integration - A Case Study," Int'l Conf on Software Engineering Research & Practice (SERP2019), Las Vegas, USA
N. Chen, E. Chen and I Chen, "Integrating Software Testing Standard ISO/IEC/IEEE 29119 to Agile Development," Int'l Conf on Software Engineering Research & Practice (SERP2018), Las Vegas, USA
S. C. Lo and N. Chen, "IEEE 42010 and Agile Process- Create Architecture Description through Agile Architecture Framework," ," Int'l Conf on Software Engineering Research & Practice (SERP2017), Las Vegas, USA
R. Subramania, N. Chen and T. Zhu, "Behavior Driven Test Automation Framework," Int'l Conf on Software Engineering Research & Practice (SERP2017), Las Vegas, USA
K. Bhalerao and N. Chen, "Principles of Continuous Integration (CI) in Practice," Int'l Conf on Software Engineering Research & Practice (SERP2016), Las Vegas, USA

N. Chen, "IEEE std 829-2008 and Agile Process - Can they work together", Int'l Conf on Software Engineering Research & Practice (SERP2013), Las Vegas, USA
T.W. Calwell, and N. Chen, "Grip Pressure Sensor," US Patent U.S. Patent# 8,033,916 issue date: October 11, 2011
N. Chen and W. L. Cheung, "Bow-to-string pressure training device for bowed string music instruments," US Patent # 7605317, issue date: 10/20/2009

INDUSTRY ACTIVITIES

Consultant
Microgrid (Blockchain, IoT) , Smart Power Grid Sensing (Grafana Time Series) in the Power Electric Industry, Full Stack Web Development (React, Django, Nodejs)

HONORS

Excellent in Teaching Award, UPCEA, Leaders in Professional, Continuing and Online Education, 2017
Faculty Marshal, College of Engineering and Computer Science, 2013

CERTIFICATIONS AND PROFESSIONAL MEMBERSHIP

Software Architecture: Principles and Practices, Software Engineering Institute, Carnegie Mellon University
Member, Chinese-American Computer Association

SERVICE

Department Vice Chair 2020-2021
Faculty Selection Committee 2017-18
Faculty Selection Committee (Chair) 2016-17
Graduate Committee 2016-17
Undergraduate Committee 2018-19
Department Chair (2000-2003)

RECENT CONTRACTS, GRANTS

Intramural Grant, 2014-15, $3000
University Missions and Goals Initiative $14,000, 2002.
N. Chen, "Cyber Lab," 1998-99 University Missions and Goals Initiatives. Award size: $10,365.00.
N. Chen, "ECS Faculty Project – Defining a 300 or 400 level course in Introduction to Systems Engineering," Funded by Rockwell Endowment income 1998-99.
"Firmware Programming and Testing of Foreman's DNC," funded by AMADA Engineering and Service Inc., $5000.00,

"Microprocessor Based Tape Drive Emulator" funded by AMADA Engineering and Service Inc., $35,000.00

Curriculum Vitae

Song-James Choi
Tel: 657-2787257 Email: jchoi@fullerton.edu

POSITION HISTORY

2014 - 2018	Program Coordinator for Masters of Science in Software Engineering California State University: Fullerton, CA
2009 -	Professor, Computer Science Dept. California State University: Fullerton, CA
2006 - 2009	Chair, Computer Science Dept. California State University: Fullerton, CA
2004 – 2005	Program Coordinator for Masters of Science in Software Engineering California State University: Fullerton, CA
2002 – 2009	Associate Professor, Computer Science Dept. California State University: Fullerton, CA
1996 – 2002	Assistant Professor, Computer Science Dept. California State University: Fullerton, CA
1993 -1996	Visiting Research Scientist, Computer Science Dept. University of Southern California: Los Angeles, CA
1990 – 1993	Research Associate, Computer Science Dept. University of Southern California: Los Angeles, CA
1988 – 1989	Assistant Professor, Computer Science Dept. Calif. State University in Los Angeles: Los Angeles, CA
1985 – 1988	Research Assistant, Computer Science Dept. University of Southern California: Los Angeles, CA

EDUCATION

- University of Southern California: Los Angeles, CA
  Ph.D. - Computer Science
  Major in Software Engineering

- University of Southern California: Los Angeles, CA
  M.S. - Computer Science
  Major in Software Engineering

- Karlsruhe Institute of Technology: Karlsruhe, Germany
  M.S. – Particle Physics

- Karlsruhe Institute of Technology: Karlsruhe, Germany
  B.S. – Particle Physics
- Salem High School: Salem, Germany
- Salem Junior High School: Salem, Germany

PUBLICATIONS

• C. Jo, G. Chen and J. Choi, "A Framework for BDI Agent-Based Software Engineering", *Studia Informatica Universalis (Int'l Journal)*, 2005

• Choi and Scacchi, Formal Analysis of Structural Correctness of Software Descriptions, International Journal of Computers and Applications, 2003

• Choi and Scacchi, Modeling and Simulating Software Acquisition Process Architecture, Journal of Systems and Software, 2001

• Choi, E3SD: AN Environment Supporting Structural Correctness of SLC Descriptions, IASTED Software Engineering Conference, 2000

• Choi and Scacchi, Modeling and Simulating Software Acquisition Process Architecture, ProSim2000, 2000

• Scacchi and Choi, Experience with Software Architecture and Configured Software Descriptions, WESAS 2000, May 2000

• Choi, Normalization and Tools Supporting the Structural Correctness of SLC Descriptions, Proc. in IASTED International Conference on Software Engineering, 1998

• Choi, Software Maintenance through Reverse engineering, Proc. in 8th KSEA Technology Conference, 1998

• Choi and Scacchi, Softman: An Environment for Forward and Reverse Computer Aided Software Engineering, Information and Software Technology, 33(9):664-674, November 1991

• Choi and Scacchi, Extracting and Restructuring the Design of Large Systems, IEEE Software (7):66-73, January 1990

• Choi and Scacchi, Assuring the Correctness of Configured Software Descriptions, Proc. 2nd Int. Workshop on Software Configuration Management, ACM Software Engineering, 17(7) 67-76, 1989

• Choi, Softman: An Environment for Forward and Reverse Engineering, PHD Thesis, 1988

RESEARCH GRANTS

• 2000, Lockheed Martin, for Research in Identification and Qualification of Reuse of Legacy Software Systems

• 1999, Junior/Senior/general Faculty Research Award, for investigation of Reengineering Software Designs Using Restructuring

• 1998 SH Corp, for investigation of Reverse Engineering for maintaining and Improving Software Systems

• 1998 Lockheed Martin, for Research in Reuse of Software Using Orthogonal Threads

• 1990 - 1993 Northrop Corporation, for Research in Problem and Opportunities for very large software engineering and software process engineering

• 1990-1992 Naval Ocean System Center, for Research in the System Factory Approach to Large Scale Software Engineering Environments

• 1989-1992 Pacific Bell, for Research in the USC System Factory Project

• 1988-1990 AT&T Laboratories, for Research into flexible software manufacturing systems

• 1985 TRW Defense Systems Group, for Research in Computer Science and Engineering

PROFESSIONAL ACTIVITIES

- **Program Chair**, Workshop on Bridging the Gap, CSUF, 2007
- **Program Committee Member**, *IASTED International Conference on Software Engineering*, Innsbruck, Austria, 2007 (SE2007)
- **Program Committee Member**, *IASTED International Conference on Software Engineering*, Innsbruck, Austria, 2006 (SE2006)
- **Program Committee Member**, *IASTED International Conference on Software Engineering*, Innsbruck, Austria, 2005 (SE 2005)
- **Program Committee Member**, *IASTED International Conference on Software Engineering*, Innsbruck, Austria, 2004 (SE2004)
- **Program Committee Member**, *7th IASTED International Conference on Software Engineering and Applications*, Marina Del Rey, USA, 2003 (SEA2003)

- **Program Committee Member**, *6th IASTED International Conference on Software Engineering and Applications*, 2002 (SEA2002)
- **Program Committee Member**, 2nd ACIS Annual International Conference on Computer and Information Science (ICIS) '02), Seoul, Korea, 2002
- **Program Committee Member** , SNPD '02 - 3rd ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing, Madrid, Spain, 2002

SERVICE ACTIVITIES

- **Department Chair (2006 -2009)**
- **Coordinator for Masters of Software Engineering (MSE) Program (2004 – 2005, 2014 -)**
- **Chair, Masters of Science in Engineering Management Program Committee**
- **Dept. Executive Committee**
- **Dept. Personnel Committee**
- **Dept. Selection Committee**
- **Dept. IRC (Instructional Resource Committee)**
- **Dept. UPE Advisor**
- **Dept. Graduate Committee**
- **Dept. Undergraduate Committee**
- **Dept. Library Committee**
- **College Curriculum Committee**
- **College Ad Research Committee**
- **University Ad Hoc Global Competency Committee**
- **University Research Committee**
- **University Library Committee**
- **University Professional Leave Committee**
- **University Presidents Scholar Committee**

BIN CONG
Department of Computer Science
California State University at Fullerton
Email: bcong@fullerton.edu

Education:
Ph.D. Computer Science, University of Texas at Dallas, August 1991
B.S. Computer Science, Nanjing University, China, August 1982

Academic Experience:
August 2004 - Present: Professor, California State University at Fullerton
Aug. 2004 – Aug 2007: Coordinator of the MSE (Master of Software Engineering – On-line) at California State University.
August 2000 – August 2004: Associated Professor, California State University at Fullerton
August 1998 – August 2000: Assistant Professor, California State University at Fullerton
September 1997 – August 1998: Associate Professor, Cal Poly at San Luis Obispo
May 1996 – August 1997: Associate Professor, South Dakota State University
August 1991 - May 1996: Assistant Professor, South Dakota State University

Non-Academic Experience
Aug. 2000 – Aug. 2001: (Professional Leave.) Chief Technology Officer, AE Inc. at Silicon Valley

Certifications
May 2012: Certified Scrum Product Owner
Feb. 2012: Certified Scrum Master
September 2002 - Present: Certified CMMI High Maturity Lead, and Instructor

Current membership in professional organizations
ACM，IEEE, SEI and CMMI Institute

Honors and awards
WHO'S WHO among America's Teachers 1996
International WHO'S WHO of Information Technology 1997
Outstanding Faculty for Research and Creative Activities, CSUF, 2002-2005
Outstanding Faculty Recognition Award for Service, CSUF, April 2003-2006
Distinguished Oversea Chinese Scholar, Oct 2008
Distinguished Faculty Member, College of ECS，May 2011
Chinese IT Standard Committee Member，2015 – 2018

Service activities
Served as Chair for following Department Committees in past five years:
Department Personnel Committee, Department Selection Committee
Served as Coordinator for the following programs in Cal State Univ. at Fullerton:

MSE （Master of Science in Software Engineering), AMSE (Accelerated Master of Science in Software Engineering), Graduate Program in Computer Science
Served as the reviewer for CMMI 2.0 model, 2017 – 2019
Served as CMMI 2.0 panel in 2018's CMMI conference
Invited to give presentations in CMMI Conference and China's TiD conference

Publications in past 5 years
1. "Making CMMI a Safety Net for Agile Development", Capability Counts 2016, Reston, VA.
2. "Spin and re-spin a web to catch all possible bugs: a new way to build and continuously refine a process performance model", Capability Counts 2017, Reston, VA.
3. "Unity of learning and doing: value driven Agile and Lean software development", a book published by Post & Telecom Press (A top Chinese Publisher in IT), Oct 1, 2017

In the past 30 years, had over 150 publications and several research grants.

Curriculum Vitae

Mikhail I. Gofman
Associate Professor
Computer Science Department
California State University, Fullerton

Research Interests

Biometrics, Access Control Policy Analysis, Information Flow Security, Scientific Workflow Security, Virtualization and Cloud Security, Network Security, Systems Security, Wireless Sensor Networks, Privacy, Software Engineering, Experimental Computer Systems.

Education

Ph.D. in Computer Science August 2012
State University of New York at Binghamton
Dissertation: Efficient Policy Analysis for Administrative Role Based Access Control without Separate Administration
Advisor: Dr. Ping Yang

M.S. in Computer Science May 2008
State University of New York at Binghamton
Thesis: Efficient Policy Analysis for Administrative Role Based Access Control
Advisor: Dr. Ping Yang
GPA: 4.0/4.0

B.S. in Computer Science May 2006
State University of New York at Binghamton
GPA: 3.575/4.0

ISC^2 Certified Information Security Professional (CISSP) January 2020
Non-Member ID (temporary ID): 365097020

Scholarly and Creative Activity

❑ **Dissertation Research: Efficient Analysis for Administrative Role Based Access Control Policies (ARBAC)**

- Developed *Role Based Access Control Policy Analysis Tool (RBAC-PAT)* which solves a wide range of ARBAC analysis problems including: *user-role reachability, weakest precondition, availability, role-role containment, dead role analysis, RBAC information flow analysis, hierarchical conflict detection, hierarchical role assignment checking, and separate administrating restriction checking.* Since it's release in Spring of 2009, RBAC-PAT has been used by researchers at *Massachusetts Institute of Technology (MIT), Purdue University, University of Waterloo, University of Texas at San Antonio, and University of Della Svizzera Italiana.*
- Co-developed symbolic user-role reachability analysis algorithms for efficient analysis of ARBAC policies with *parameterized roles.*
- Co-developed and implemented algorithms for *incremental analysis* of evolving ARBAC policies. The incremental algorithms result in up to 181x speedup when compared to their predecessor non-incremental counterparts.
- Co-developed efficient algorithms for analysis of ARBAC policies that do not satisfy the *separate administration restriction* which requires the sets of users with and without administrative permissions to be disjoint.

❑ **Information Flow Security Analysis**

- Developed Information Flow Analyzer tool for modeling scientific workflows and detecting cases where the flow of information violates the security policy.
- Developed incremental algorithms for analyzing the information flows induced by the RBAC policy and detecting security vulnerabilities allowing information to flow from high security to low security objects.
- Co-developed algorithms for checking provenance security of scientific workflows.

❑ **Virtualization Security**

- Developed a privacy-aware virtual machine checkpointing mechanism (SPARC) which avoids checkpointing the physical memory of applications that process sensitive data.
- Implemented a mechanism for monitoring and filtering network traffic between the VMs running on the same physical host.
- Co-implemented a mechanism enabling direct VM-to-VM communications.

❑ **Wireless Sensor Networks**

- Co-implemented the existing approach that uses trust-based routing to counter selective forwarding attacks in wireless sensor networks. Also, co-developed and co-implemented a probabilistic approach for thwarting selective forwarding attacks which involve colluding adversarial nodes.
- Co-implemented and co-refined the HIF (High Importance First) protocol for timely delivery of sensor data based on the data importance.

❑ **Biometrics**

- Researching biometric fusion models for access control in consumer mobile electronics. The goal is to develop a statistical fusion model which fuses data from face, voice, and fingerprint biometric modalities. The model must be able to achieve secure and robust biometric-based authentication in uncontrolled environments while at the same time scale to limited computational resources of mobile platforms.
- Researched and designed algorithms for integrating data from face and voice biometric modalities at both score and feature levels.
- Implemented biometric fusion models on Android, Windows, and Linux operating systems.
- Researching approaches for selecting features from multiple biometric modalities based on the feature quality.

Publications

Book

1. Mitra, Sinjini, and Mikhail Gofman, "Biometrics in a Data Driven World: Trends, Technologies and Challenges", *Boca Raton: CRC/Taylor & Francis Group*, 2016. ISBN-10: 1498737641. ISBN-13: 978-1498737647.

Book Chapter

1. Gofman, Mikhail, Sinjini Mitra, Berhanu Tadesse, and Maria Villa. "Biometrics for Enterprise Security Risk Mitigation." In *Advances in Cybersecurity Management*, pp. 163-195. Springer, Cham, 2021.
2. Gofman, Mikhail, Sinjini Mitra, Yu Bai, and Yoonsuk Choi. "Security, Privacy, and Usability Challenges in Selfie Biometrics." In *Selfie Biometrics*, pp. 313-353. Springer, Cham, 2019.

3. Oh, Jisu, Kyoung-Don Kang, Jang Young Kim, and Mikhail I. Gofman. "A Cross-layer Approach to Reducing Delay and Energy Consumption Based on Data Importance in Sensor Networks." In *Handbook on Sensor Networks*, pp. 25-40. 2010.

Refereed Journal Papers

4. Gofman, Mikhail I., Sinjini Mitra, Tsu-Hsiang Kevin Cheng, and Nicholas T. Smith. "Multimodal Biometrics for Enhanced Mobile Device Security." *Communications of the ACM 59, no. 4* (2016): 58-65. **(rated as Q1 journal in Computer Science by SCImago)**.
5. Yang, Ping, Mikhail I. Gofman, Scott D. Stoller, and Zijiang Yang. "Policy analysis for Administrative role Based Access Control without Separate Administration." *Journal of Computer Security 23*, no. 1 (2015): 1-29. **(rated Q1 in Computer Networks and Communications by the SCImago)**.
6. Gofman, Mikhail I., Ruiqi Luo, Chad Wyszynski, Yaohui Hu, Ping Yang, and Kartik Gopalan. "Privacy-preserving virtual machine checkpointing mechanism." *International Journal of Cloud Computing 10 3*, no. 3 (2014): 245-266. **(Acceptance rate: 23.64%)**
7. Gofman, Mikhail I., and Ping Yang. "Efficient Policy Analysis for Evolving Administrative Role Based Access Control." *International Journal of Software Informatics 8, no. 1* (2014): 95-131. **(Acceptance rate: 5.4%)**.
8. Stoller, Scott D., Ping Yang, Mikhail I. Gofman, and C. R. Ramakrishnan. "Symbolic Reachability Analysis for Parameterized Administrative Role-Based Access Control." *Computers & Security 30, no. 2-3* (2011): 148-164.
9. Yang, Ping, Shiyong Lu, Mikhail I. Gofman, and Zijiang Yang. "Information Flow Analysis of Scientific Workflows." *Journal of Computer and System Sciences 76, no. 6* (2010): 390-402.

Refereed Conference/Workshop Papers

10. Villa, Maria, Mikhail Gofman, Sinjini Mitra, Ali Almadan, Anoop Krishnan, and Ajita Rattani. "A survey of biometric and machine learning methods for tracking student's attention and engagement." In 2020 *19th IEEE International Conference on Machine Learning and Applications (ICMLA)*, pp. 948-955. IEEE, 2020.
11. Tu, David, Doina Bein, and Mikhail Gofman. "Designing a Unity Game Using the Haptic Feedback Gloves, VMG 30 Plus." In *7th International Conference on Information Technology-New Generations (ITNG 2020)*, pp. 393-400. Springer, Cham, 2020.
12. Olazabal, Oscar, Mikhail Gofman, Yu Bai, Yoonsuk Choi, Noel Sandico, Sinjini Mitra, and Kevin Pham. "Multimodal biometrics for enhanced iot security." In 2019 *IEEE 9th Annual Computing and Communication Workshop and Conference (CCWC)*, pp. 0886-0893. IEEE, 2019.
13. Gofman, Mikhail, Narciso Sandico, Sinjini Mitra, Eryu Suo, Sadun Muhi, and Tyler Vu. "Multimodal biometrics via discriminant correlation analysis on mobile devices." In Proceedings of the *International Conference on Security and Management (SAM)*, pp. 174-181. The Steering Committee of The World Congress in Computer Science, Computer Engineering and Applied Computing (WorldComp), 2018. **(Acceptance Rate: 21%)**.
14. Mitra, Sinjini, Mikhail Gofman, Gregory Parsons, and Jessie Peissig. "Facial asymmetry versus Facial Makeup." In 2018 *IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC)*, pp. 197-203. IEEE, 2018.
15. Kim, Daniel E., and Mikhail Gofman. "Comparison of shallow and deep neural networks for network intrusion detection." In 2018 *IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC)*, pp. 204-208. IEEE, 2018.
16. Masluk, Alexander, and Mikhail Gofman. "Protecting Personal Data with Blockchain Technology." In *Information Technology-New Generations*, pp. 119-125. Springer, Cham, 2018.

17. Villa, Maria, Mikhail Gofman, and Sinjini Mitra. "Survey of biometric techniques for automotive applications." In *Information Technology-New Generations*, pp. 475-481. Springer, Cham, 2018.

18. Mitra, Sinjini, and Mikhail Gofman. "Towards greater integrity in online exams." *In Proceedings of* 22^{nd} *Americas Conference on Information Systems (AMCIS), AMCIS 2016 Proceedings, IS Curriculum, Education and Teaching Cases*, 28. 2016. (**A-level CORE 2018-ranked conference**)

19. Biloki, Jacob, Kim, Daniel, Karunanithi, Liu, Yu, Gofman, Mikhail, and Mitra, Sinjini, "Greater Mobile and IoT Security Through Multimodal Biometrics", *IEEE Conference on Technologies for Sustainability (SusTech) Conference*, student poster, Phoenix Arizona, 2016.

20. Gofman, Mikhail, Mitra, Sinjini, Cheng, Kevin, Smith, Nicholas "Feature-level Multimodal Biometric Authentication in Consumer Mobile Devices", *IEEE* 7^{th} *International Workshop on Information Forensics and Security*, Poster/Demo, 2015.

21. Gofman, Mikhail, Sinjini Mitra, Kevin Cheng, and Nicholas Smith. "Quality-based Score-Level Fusion for Secure and Robust Multimodal Biometrics-Based Authentication on Consumer Mobile Devices." In proceedings of the International Conference. Software Engineering Advances (ICSEA), pp. 274-276. 2015.

22. Luo, Ruiqi, Ping Yang, Shiyong Lu, and Mikhail Gofman. "Analysis of Scientific Workflow Provenance Access Control Policies." In 2012 *IEEE* 9^{th} *International Conference on Services Computing*, pp. 266-273. IEEE, 2012. (**Acceptance rate: 18%**).

23. Gofman, Mikhail I., Ruiqi Luo, Ping Yang, and Kartik Gopalan. "SPARC: A Security and Privacy Aware Virtual Machine Checkpointing Mechanism." In proceedings of the 10^{th} *Annual ACM Workshop on Privacy in the Electronic Society*, pp. 115-124. 2011. (**Acceptance rate: 16%**).

24. Gofman, Mikhail I., Ruiqi Luo, and Ping Yang. "User-role Reachability Analysis of Evolving Administrative Role Based Access Control." In *European Symposium on Research in Computer Security*, pp. 455-471. Springer, Berlin, Heidelberg, 2010. (**Acceptance rate: 20.9%**).

25. Gofman, Mikhail I., Ruiqi Luo, Jian He, Yingbin Zhang, Ping Yang, and S. Stoller. "Incremental Information Flow Analysis of Role Based Access Control." *In Security and Management*, pp. 397-403. 2009. (**Acceptance rate: 26%**).

26. Stoller, Scott, Yang, Ping, Gofman, Mikhail, Ramakrishnan, C.R., "Symbolic Reachability Analysis for Parameterized Administrative Role Based Access Control", 14^{th} *ACM Symposium on Access Control Models and Technologies (SACMAT)*, Pages 165–174, ACM press, 2009 (**Acceptance rate: 32%**).

27. Gofman, Mikhail I., Ruiqi Luo, Ayla C. Solomon, Yingbin Zhang, Ping Yang, and Scott D. Stoller. "RBAC-PAT: A Policy Analysis Tool for Role Based Access Control." In *International Conference on Tools and Algorithms for the Construction and Analysis of Systems*, pp. 46-49. Springer, Berlin, Heidelberg, 2009.

28. Kravitz, Brian, Gofman, Mikhail, Kang, K.D., and Candela, Victor. "Extending Trust Based Routing by Collusion Avoidance and Detection", *IEEE Upstate NY Workshop on Communications, Sensors, and Networking, November 9, 2007.*

29. Stoller, Scott D., Ping Yang, C. R. Ramakrishnan, and Mikhail I. Gofman. "Efficient policy analysis for administrative role based access control." In proceedings of the 14^{th} *ACM Conference on Computer and Communications Security*, pp. 445-455. 2007. (**Acceptance rate: 18%**)

Patent

Source-Transfer Switching System and Method (with Yagudayev, Boris, and Gofman, Igor),

Application No. WO/2009/073510 (Patent Pending), Nov, 2009.

Software and Tools Developed

I am the main developer of the following tools:

- **Role Based Access Control Policy Analysis Tool (RBAC-PAT)**
  A tool for checking security properties of ARBAC policies.
- **Information Flow Analyzer**
  A tool for checking whether a particular execution of scientific workflow violates the information flow security policy.
- **A Tool for Incremental ARBAC Analysis**
  A tool which enables the administrators to efficiently analyze evolving ARBAC policies. Unlike it's predecessors, this tool does not assume that the ARBAC policy is fixed.
- **Security and Privacy Aware Checkpointer (SPARC)** A tool that avoids checkpointing the memory of applications that process sensitive data.

Selected Talks and Presentations

1. Mobile Biometrics – Past, a talk hosted by the Osher Lifelong Learning Institute, Spring 2021
2. Mobile Biometrics – Past, Present, and Future, Noontime Faculty Library Talks, Fall 2020
3. Biometrics: Myth vs Reality, Tech Day 2020, Cal State Fullerton, Fall 2020.
4. Master of Science in Computer Science, Meeting with Raytheon Regarding the MS in Computer Science Program.
5. Biometrics Security, Cybersecurity Awareness Day, Cal State Fullerton, Fall 2019.
6. Objectives of the Cybersecurity Center, Cybersecurity Awareness Day, Cal State Fullerton, Fall 2019.
7. Facial Asymmetry vs Facial Makeup, Las Vegas, Nevada, Annual Computing and Communications Workshop and Conference (CCWC), 2018.
8. Multimodal Biometrics via Discriminant Correlation Analysis on Mobile Devices, Las Vegas, Nevada, 2018.
9. Nurturing Cybersecurity Talent and Beyond, Orange County Business Council Meeting (2017).
10. ECS Center for Cybersecurity: A Vision of Excellence in Cybersecurity, Cybersecurity Panel for Orange County Business Council (2016)
11. Malware Pay Per Install Distribution Services, California State University, Fullerton, CA, USA, May 2015.
12. Preserving Confidentiality in Virtual Machine Checkpointing and Role Based Access Control, Raytheon Company, CA, USA, May 2015.
13. Preserving Confidentiality in Virtual Machine Checkpointing and Role Based Access Control, School of Engineering and Computer and Computer Science

14. Preserving Confidentiality in Virtual Machine Checkpointing and Role Based Access Control, Binghamton, NY, USA, March 2012.

15. SPARC: A Security and Privacy Aware Virtual Machine Checkpointing Mechanism, Chicago, IL, USA, October 2011.

16. User-Role Reachability Analysis of Evolving Administrative Role Based Access Control, Athens, Greece, September 2010.

17. HAVE: Detecting Atomicity Violations via Integrated Static and Dynamic Analysis, Yorkshire, UK, March 2009.

18. RBAC-PAT: A Policy Analysis Tool for Role Based Access Control, Yorkshire, UK, March 2009.

19. Extending Trust Based Routing by Collusion Avoidance and Detection. Syracuse, NY, 2007.

Teaching

Developed Computer Science, Cybersecurity Concentration, B.S. (2020)

Made Significant Progress Toward:

- Having the Cybersecurity Concentration accredited as The National Centers of Academic Excellence in Cyber Defense (CAE-CD) by the National Security Agency and the Department of Homeland Security.
- Having the Cybersecurity Concentration comply with the California Cybersecurity Career Education Pipeline and Pathway Project (CCCEPPP).
- Developing a transfer curriculum with local community colleges (e.g., Orange Coast, Moreno Valley, and Cypress).

Courses Developed at California State University of Fullerton

- *Cybersecurity Foundations and Principles. Undergraduate. Fall 2021*
- *Web Security (CPSC-455).* Undergraduate. Spring 2019.
- *Cyber Forensics (CPSC-552).* Graduate. Fall 2018.
- *Malware Analysis (CPSC-458).* Undergraduate. Fall 2018.
- *Network Security Fundamentals (CPSC-456).* Undergraduate. Fall 2014.

Courses Taught at California State University of Fullerton

1. Web Security (undergraduate; Spring 2019, 2020)
2. Malware Analysis (undergraduate; Fall 2018)
3. Network Security Fundamentals (undergraduate; developed and taught in Fall 2014–2017)
4. Cryptography (undergraduate; Spring 2013–2020)
5. Introduction to Security (undergraduate; Fall 2012–2013)

6. Operating Systems (undergraduate; Fall 2012–2020)
7. Computer Communications (undergraduate; Spring 2013–2018)

Courses Taught at State University of New York at Binghamton

- ❑ Lecturer for *Computer Security*. Spring 2011.
- ❑ Teaching assistant for *Computer Security*. Spring 2010 - Fall 2011.
- ❑ Teaching assistant for *Programming Languages* course. Fall 2007, Fall 2009.
- ❑ Teaching assistant for *Automata Theory and Formal Languages* course. Spring 2007.
- ❑ Teaching assistant for *Freshman Seminar*. Fall 2006.

Student Supervision

Master Theses Advised

- ❑ Traboulsi, Nicole, *Deepfakes: Analysis of Threats and Countermeasures*, Fall 2020
- ❑ Zenan Li, *Multiple-Person 3D Human Mesh Recovery From Single 2D Picture*, Spring 2019.
- ❑ Kim, Daniel, *Comparison of Shallow and Deep Neural Networks for Network Intrusion Detection*, Fall 2017
- ❑ Chad Wyszynski, *Privacy-preserving Virtual Machine Checkpointing Mechanism*, Spring 2013-Fall 2013.
- ❑ Moohanad Rasheed Hassan, *Automated Discovery of Client-side Web-related Security Vulnerabilities*, Spring 2013.

Selected Master Students Advised

- ❑ Curtis Galvez, *Designing a System for Optimizing Graduate Applications*, Spring 2020
- ❑ Jianqi Zhu, *NekoGram Social Web App Project Report*, Spring 2019
- ❑ Ankita Jaiswal, *Conversion of Black and White Images to Colored Image Using Generative Adversarial Network*, Spring 2019
- ❑ Alpesh Ahir and Bhavika Bhanushali, *Program Assessment System*, Spring 2019
- ❑ Gon Choi, *WebRTC Based Webcam and Desktop Streaming for Remote Online Exam Proctoring Systems*, Spring 2018
- ❑ Ganesh Sharadrao Kate, *Hand-Written Digit Recognition Using Vectorized Approach*, Spring 2018
- ❑ Padsala Chirag Gokul, *Electronic Parking Rental System*, Spring 2018
- ❑ Donald Atha, *Designing a REST-Based Interface for the Cassandra Database Storage and Retrieval Operations*, Fall 2015
- ❑ Jeffrey Bohlin, *Score-level Fusion of Face, Voice, and Fingerprint Biometrics*, Spring 2015
- ❑ Diana Laforteza, *Calzone–Restaurant Nutrition Information Web App*, Fall 2015

- ❑ Baatar Sodnompel, *GPU-based Analysis of Role Based Access Control Policies*, Fall 2015
- ❑ Timothy Wen, *Community Quest*, Fall 2015–present.
- ❑ Suhair Alotaibi, *Security of Near-Field Communication*, Spring 2015.
- ❑ Marianne Barakat and Bernice Chen, *Vitamin Tracker*, Spring 2015.
- ❑ John Dinh, *Ear Recognition in Mobile Devices*, Spring 2015.
- ❑ Brian Frick, *A Domain Blocker for Home Networks*, Spring 2015.
- ❑ George Isaac, *Track Your Expenses Web Site*, Spring 2015.
- ❑ Frida Kiriakos, *Implementation of the SNMP-Kernel for the PolyKernel System*, Spring 2015.
- ❑ Hall To, *Cosplay Photographer Social Network*, Spring 2015.
- ❑ Kevin Cheng, *Statistical Face-Voice Fusion at the Feature Level for Robust Biometrics Authentication*, Spring 2014–present.
- ❑ Monil Wani, *The Kalam Encryption Algorithm*, Spring 2014–present.
- ❑ Sara Mortazavi, *Quality Assessment in Fusion of Biometric Features*, Fall 2014.
- ❑ Hernan Manabat, *Provisioning Virtual Network Security Lab*, Fall 2014.
- ❑ Niranjan Virupaksha, *Securing Storage Area Networks*, Fall 2014.
- ❑ Michael Ratsamy, *Private Browser Residual Data in Firefox with Browser Extensions*, Fall 2014.
- ❑ Johnathan Son, *Educational Math Video Game*, Fall 2014.
- ❑ *Implementing, Managing, and Administering Patient Information Management System for Family Services of Westchester (FSW) Senior Citizen Assisted Living Facility.* A team project involving the following graduate students:
  - Ashwin Shetty. Fall 2014.
  - Vihang Mirkhelkar. Fall 2014.
- ❑ Eric Scott, *Facial Recognition and Biometric Fusion for Mobile Devices*, Spring 2014.
- ❑ Dongjin Kim, *Security and Privacy of Mozilla Firefox Website Thumbnails*, Spring 2014.
- ❑ Musaed Alanzi, *Developing More Efficient Cryptographic Libraries for Java*, Spring 2014.
- ❑ Monika Pandey, *Data Security in Cloud Computing*, Spring 2014.
- ❑ Phi Quoc Ngyen, *Background Check Third Party Integration*, Spring 2014.
- ❑ Nguyen Quach, *Single Sign-On Authentication with Lightweight Directory Access Protocol (LDAP)*, Spring 2014.
- ❑ Sachichandra Kallare Balachandra, *Security Issues in Thumbnail Rendering and Google Add Account Feature*, Summer 2013 - Fall 2013.
- ❑ Mohammad Ziaee, *Web Security of Multi-sign-on Feature*, Summer 2013–Fall 2013.
- ❑ Xinwei Shen, *Developing a Framework for Biometric Fusion for Android*, Spring 2013–Fall 2013.

Independent Graduate Research

- ❑ Since fall 2015, I have advised 13 graduate independent studies
- ❑ Nicholas Smith and Kevin Cheng (hired research assistants), *Biometric Fusion on Consumer Mobile Devices.* Fall 2014 - Spring 2015.
- ❑ Brian Frick, *Implementing Multimodal Biometric Fusion Algorithms on Android Mobile Devices*, Fall 2014.
- ❑ Natalia Anderson, *Practical Real World Web Development and Database Management*, Fall 2014.

Master Projects Reviewed

- ❑ Ki-Chang Kim, *VBA Program to Project and Schedule Classes for all Classrooms in a Department*, Spring 2014.
- ❑ Bryan Gonzalez, *Biometrics Encryption*, Spring 2014.
- ❑ Jay Raval, *Linear Panoramic Mosaics*, Spring 2014.
- ❑ Hussein Altabrawee, *3-D Convex Hull in MapReduce Style*, Fall 2013.
- ❑ Kimberly Hermans, *Classroom Response System*, Fall 2013.
- ❑ Bryan Tamada, *Web Mining User Reviews and Comments*, Fall 2013.
- ❑ Seema Jain, *Timetable Scheduling Assistant System*, Fall 2013.

Selected Undergraduate Independent Studies Advised

- ❑ Josiah Peedikyll, Rian Luzio, and Yao Lin, *Security Operations Center in the Box*, fall 2020-spring 2021.
- ❑ Justine Tran, Natalie Ang, Luigi Sanchez, An Nguyen, Simin Mokhtari, Jacob Biloki, Jacob Wood, and David Dao *Implementing Code Analysis Tools for Unisys)*, spring 2016 – fall 2018.
- ❑ Joshua Christ, Rohan Rijal, Jose Urratia, *Performing a PCI and DSS Compliance Penetration Test for the KindHealth Company*, Spring 2018
- ❑ Jacob Biloki, *Performing Security Controls Review for the Boeing Corporation*, Spring 2017
- ❑ Jimmy Yoon, *Learning iOS App Development with Swift, Fall 2015.*
- ❑ Ivan Espinosa (hired research assistant), *Biometric Fusion on Consumer Mobile Devices.* Fall 2014.
- ❑ Scott Stetzko, *Implementing and Managing a Web-Based Patient Information Management System*, Fall 2014.
- ❑ Michael Jonas, *Visualization of Cryptographic Ciphers for Improving Learning Outcomes in Security Courses*, Fall 2014.
- ❑ Harry Mora, *Developing a Web-Based Content Management System for Biometrics Research Group*, Fall 2014.
- ❑ *Implementing, Managing, and Administering Patient Information Management System for Family Services of Westchester (FSW) Senior Citizen Assisted Living Facility.* A team project involving the following undergraduate students:
  - Nathan Cobb. Spring 2013–Summer 2015.
  - Scott Stetzko. Fall 2014

- Kathy Saad. Fall 2014.
- Robert Cabral. Fall 2013–Spring 2014.
- Jeremy Chavez. Fall 2013–Spring 2014.
- Jaime Cabrera. Fall 2013–Spring 2014.
- Andrew Hoang. Fall 2013–Spring 2014.
- Oseas Moran. Spring 2014–present.
- Curtis Galvez. Fall 2015.
- Louis Barrera. Fall 2015.

❑ Danny Chan, *Live Postcopy Migration of Virtual Machines using Cluster-wide Reduplication.* Technical advising by Dr. Kartik Gopalan of State University of New York at Binghamton, Fall 2013.

❑ Austin White, *A Web Application for Streamlining Management of Athlete Data*, Fall 2013.

❑ Christopher Nguyen, *Benchmarking Performance of Flash File Systems on Convention Disk Drives*, Fall 2013.

❑ Flavio de Pecol, *Computer Security and Biometric Authentication in Linux Operating System*, Summer 2013-Fall 2013.

❑ Ivan Linan, *Biometrics Research*, Summer 2013–Fall 2013.

❑ Dulcinea Chau, *Implementing Parallel Algorithms for Policy Analysis for Administrative Role Based Access Control without Separate Administration*, Spring 2013.

Professional Development

❑ Regularly attended CISSP and OWASP seminars to keep up with the security trends (2019–present)

❑ Received Certified Information Systems Security Professional (CISSP) certification (2019)

❑ Attended the 8^{th} *Symposium on Curriculum Development in Security and Information Assurance conference (CDSIA).* San Jose, CA, Spring 2015.

❑ Attended the 7^{th} *Symposium on Curriculum Development in Security and Information Assurance conference (CDSIA).* San Jose, CA, Spring 2014.

❑ Attended the 6^{th} *Symposium on Curriculum Development in Security and Information Assurance conference (CDSIA).* San Jose, CA, Spring 2013.

❑ Attended *27th IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSEC13).* Newark, NJ, Summer 2013.

Professional, University, and Community Service

Journal Editor Role

IJDSN: International Journal of Distributed Sensor Networks (2015)

National Science Foundation Proposal Review Panel Membership

❑ NSF Secure and Trustworthy Cyberspace (SaTC), Summer 2020.

❑ NSF Secure and Trustworthy Cyberspace (SaTC), Fall 2016.

Conference Technical Program Committee Membership

- ❑ BDS: Conference on Broadband Dielectric Spectroscopy and its Applications (2020)
- ❑ IEMCON: IEEE Annual Information Technology, Electronics and Mobile Communication Conference (2020)
- ❑ EDI40: International Conference on Emerging Data and Industry 4.0 (2019, 2020)
- ❑ ISEA-ISAP: Third ISEA International Conference on Security and Privacy (2018, 2019, 2020)
- ❑ Journal of Network and Computer Applications (2020)
- ❑ JISA: Journal of Information Security and Applications (2019, 2020)
- ❑ ITNG: International Conference on Information TechnologyNew Generations (2019)
- ❑ ATINER: Athens Journal of Technology & Engineering (2015, 2019)
- ❑ IEEE Big Data Service (2019)
- ❑ IJSISE: International Journal of Signal and Imaging Systems Engineering (2019)
- ❑ TBIOM: IEEE Transactions on Biometrics, Behavior, and Identity Science (2019)
- ❑ Journal of Computing and Informatics (2018)
- ❑ IEEE Access (2018)
- ❑ NAS: International Conference on Networking, Architecture, and Storage (2018)
- ❑ UBICOM: International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (2019)
- ❑ ICCGI: International Multi-Conference on Computing in the Global Information Technology (2017, 2018, 2019)
- ❑ Asia S&P: IEEE Symposium on Security and Privacy (2016)
- ❑ IPL: Information Processing Letters (2017)
- ❑ JPRR: Journal of Pattern Recognition Research (2016)
- ❑ FNC: The International Conference on Future Networks and Communications (2014-2019)
- ❑ ANT: International Conference on Ambient Systems, Networks and Technologies (2013-2015)
- ❑ 11^{th} Annual International Conference on Information Technology & Computer Science (2014)
- ❑ TE: IEEE Transactions on Education (2012, 2015)
- ❑ IJSI-SEC: Special Issue on Information and System Security at International Journal of Software and Informatics (2014)
- ❑ MILCOM: Military Communications Conference (2014)
- ❑ SSCC: Security in Computing and Communications (2014)
- ❑ FNC: The International Conference on Future Networks and Communications (2014)

- ❑ CCS: ACM Conference on Computer and Communications Security (2011, 2013)
- ❑ SSCC: International Symposium on Security in Computing and Communications (2013)
- ❑ TE: IEEE Transactions on Education (2012)
- ❑ TISSEC: ACM Transactions on Information and System Security (2012)
- ❑ CLOUDSEC: International Workshop on Security in Cloud Computing (2012)
- ❑ IC3: The Fifth International Conference on Contemporary Computing (2012)
- ❑ CADE: International Conference on Automated Deduction (2011)
- ❑ IWCMC: International Wireless Communications and Mobile Computing Conference (2011)
- ❑ ICC: International Conference on Communications (2010)

Service to the Department

- ❑ *Director of the Engineering and Computer Science Center for Cybersecurity (ECSCYBER).* (2015–present)
- ❑ *Graduate Advisor.* Fall 2017, and Fall 2018–present.
- ❑ *Undergraduate Committee.* Fall 2014–2021.
- ❑ *Selection Committee.* (2017, 2020, 2021).
- ❑ *Department Personnel Committee.* (2018–2021).
- ❑ *Assessment Committee.* Fall 2014–present.
- ❑ *Interim Graduate Advisor.* Fall 2017.
- ❑ *Undergraduate Committee Interim Chair.* Spring 2017.
- ❑ *Instructional Resource Committee (IRC).* Fall 2012–2015, 2018–2021.
- ❑ *Instructional Resource Committee (IRC) Chair*, 2015–2016.
- ❑ *Assisted ACM-W Club with Creative Coding, StemExpo, Girl Scout visits, and the NCWIT Grant*, 2017–2019.
- ❑ *Commencement Committee.* Fall 2012–2017.
- ❑ Faculty adviser of the *Offensive Security Society* student organization. Fall 2012–present. Under my tutelage the club won a second place at the National Collegiate Penetration Testing Competition (CPTC); won second place in the Information Technology Competition (ITC; 2017 and 2019), and participated in the College Cyber Defense Competition (CCDC; fall 2020). Also have have consistently coached students in security. Also, helped organize TuffyHacks and Bug Crowd security events.
- ❑ Identified and recruited from Deloitte Corporation (Ken Desforges) to serve on the Computer Science department advisory board. Fall 2014.
- ❑ Interviewed and assisted with hiring an adjunct lecturer (Chuck Siska). Fall 2014.
- ❑ *Executive Committee.* Fall 2013.

- ❑ Nominated my excelling students Chad Wyszynski and Dulcinea Chau for *Outstanding Scholarly and Creative Activities Awards*. Spring 2013.
- ❑ Prepared a poster titled *SPARC: Security and Privacy Aware Virtual Machine Checkpointing Mechanism* for Showcase of STEM Student Talent event. Spring 2013.
- ❑ Delivered talk *Virtual Machines, Real Security Challenges!* sponsored by *STEM Transfer Student Services*. Fall 2012.

Service to the School

- ❑ Organized a virtual security focus group event (2021)
- ❑ Organized a Firewall Side Chat security talk series (2016–present).
- ❑ Organized and hosted the School of Engineering and Computer Science Security Day event. Fall 2013 - Fall 2017.
- ❑ Established the *School of Engineering and Computer Science Center for Cybersecurity*. I am currently the center's director. Spring 2013–present.
- ❑ Discovered a vulnerability in the Pollack Library web system, and helped fix it. Spring 2013.
- ❑ Participated in the *Welcome to California State University of Fullerton Day*. Spring 2013, 2014, and 2015, and 2016–2020.

Service to the University

- ❑ Served on the judge panel during 2019 Annual Student Research Competition (SCAR)
- ❑ Academic Leaves Committee. Fall 2017.
- ❑ Served as reviewer of abstracts for *Southern California Conference for Undergraduate Research (SCURR)*. Fall 2014.
- ❑ Established an informal *Biometrics Research Group* which involves students from different disciplines in biometrics research.
- ❑ Faculty adviser of *Information Systems Audit and Control Association (ISACA)*. California State University of Fullerton Chapter. Fall 2012–present.
- ❑ Faculty adviser of the *Network Engineering Club*. Fall 2015–present

Community Service

- ❑ Mentoring a student from Troy High School on the project titled *Designing and Implementing an OWASP Top 10 Compliant Appointment Scheduling System*, fall 2020.
- ❑ Developing a medication management system for the *Family Services of Westchester (FSW)* non-profit organization providing assisted living services to senior citizens. Fall 2012–present.

Student Competitions

- ❑ *Coach for the Collegiate Cyber Defense Competition* (2020).
- ❑ *Coach for the Information Technology Competition coach (2015–present)*. In 2017 and 2018 the teams won second place.

- ❑ *Coach for the Collegiate Penetration Testing Competition (CPTC; 2017 and 2018)* who in 2018 won second place nationally.
- ❑ Prepared a team of three students to present a project titled *Multimodal Biometrics for Enhanced Mobile / IoT Security* at the ECS Showcase 2020. Spring 2020.
- ❑ *Coach for the Collegiate Penetration Testing Competition.* Fall 2017 and Fall 2018. The team won **second place nationally** in 2018.
- ❑ *Coach for the General Electric Challenge.* Spring 2017 and Spring 2018. The team won **second place among other competing Cal State schools.**
- ❑ *Coach for the TitanPark team for Engineering and Computer Science (ECS) Competition.* Spring 2018. Team received the **"Best Software Award"**.
- ❑ *Coached a team of students* whose research presentation titled *Greater Mobile and IoT Security Through Multimodal Biometrics* won third place at the IEEE Conference on Technologies for Sustainability (SusTech) Conference, Fall 2016.

Work Experience

- ❑ Assistant Professor of Computer Science. California State University of Fullerton. 2012-present.
- ❑ Intern at ASCO Power Technologies. Automatic Power Switch Controllers Department. Summer 2006.
- ❑ Intern at ASCO Power Technologies. Automatic Power Switch Design Department. Summer 2005.
- ❑ Intern at ASCO Power Technologies Information Technology Department. Summer 2004.

California State University, Fullerton Internal Grants

- **Research, Scholarship and Creative Activity (RSCA)** grant, Strengthening Consumer Mobile Device Security through Multimodal Biometrics, $15,000, 2019–2020.
- **Senior Intramural Grant**, Secure Multi-biometric Mobile Device Authentication through Statistically Optimized Artificial Neural Networks, $5,000, 2018–2019.
- **Research, Scholarship and Creative Activity (RSCA)** grant, Strengthening Consumer Mobile Device Security through Multimodal Biometrics, $7,498, 2016–2017.
- **Faculty Mentor ship of Undergraduate Research and Creative Activities Grant**, Toward Practical Multimodal Biometrics for Consumer Mobile Devices, $1,250, Spring 2015.
- **Incentive Intramural Research Grant**, Statistical Fusion for Robust Mobile Biometric Authentication, $10,000, 2014-2015.
- **Junior Intramural Grant**, Strengthening Mobile Authentication Through Biometric Fusion, $2,440, Fullerton 2014-2015.
- **Innovate, Develop, Engage, Act (IDEA) Grant**, Strengthening Mobile Authentication Through Biometric Fusion, $500, Spring 2013.

- **Student Travel Grant, ACM Conference on Computer and Communications Security (CCS)**, $955, Chicago, Illinois. 2011.
- **Student Travel Grant, The European Joint Conferences on Theory and Practice of Software (ETAPS)**, €750, Yorkshire, UK. 2009.

External Grants and Funding

- **Project Commissioned by the Disney Corporation**, Security Operations Center in the Box, 2020–2022 (estimated $5,000 total).
- **Project commissioned by KindHealth health insurance agency**, Security Audit Penetration Test, Spring 2018, Fall 2018. Total: $11,250.
- **Project commissioned by Unisys Corporation**, Developing Intellisense for the Algol Language contract, Spring 2017 and 2018, and Fall 2018 total: $50,000.
- **Equipment Donations** from E2VE Enterprises and miscellaneous private sources, $40,000, 2016–2017.
- **Boeing and Raytheon Support for ECSCYBER**, $50,000, 2015–present.
- **Research, Scholarship and Creative Activity (RSCA)** grant, Strengthening Consumer Mobile Device Security through Multimodal Biometrics, $7,498, 2016–2017.
- **Security Day 2017** corporate sponsorship by Dell, MITRE, and Booz Allen, $2,000, 2017.
- **Security Day 2016** corporate sponsorship by Dell, SecurityFirst companies, $2,000.
- **Tinman Systems** modeling software license donation, Spring 2016, $30,000.
- **Faculty Mentorship of Undergraduate Research and Creative Activities Grant**, Toward Practical Multimodal Biometrics for Consumer Mobile Devices, $1,250, Spring 2015.
- **Incentive Intramural Research Grant**, Statistical Fusion for Robust Mobile Biometric Authentication, $10,000, 2014–2015.
- **Junior Intramural Grant**, Strengthening Mobile Authentication Through Biometric Fusion, $2,440, Fullerton 2014–2015.
- **Innovate, Develop, Engage, Act (IDEA) Grant**, Strengthening Mobile Authentication Through Biometric Fusion, $500, Spring 2013.

Professional Committee Membership

- ❑ California Cybersecurity Career Education Pipeline and Pathway Project (CCCEPPP)
- ❑ ACM
- ❑ IEEE
- ❑ International Information System Security Certification Consortium (ISC^2)
- ❑ Open Web Application Security Project (OWASP)

AWARDS AND HONORS

- **Faculty Advisor of Distinction,** Spring 2019.
- **Nominated as Advisor of the Year Tuffy Award (2018).**
- **Nominated for the Carol Barnes Award (2018)**
- **Faculty Recognition: Scholarly and Creative Activities,** CSUF, 2018.
- **2018 Author Awards,** CSUF, 2018.
- **Faculty Recognition for Teaching,** CSUF, 2016.
- **Extraordinary and Sustained Service Award,** California State University, 2015.
- **Titan on the Rise; Early Career Investigator Award nomination,** California State University, Fullerton.
- **Outstanding Advisor Award Nomination,** California State University, Fullerton, 2012.
- **Graduate Student Award for Excellence in Research,** State University of New York at Binghamton, 2011.
- **Graduate School Academic Excellence Award,** State University of New York at Binghamton. 2008.
- **Nominated by the Computer Science department as a candidate for Chancellor's Award for Student Excellence,** State University of New York at Binghamton. 2008.
- Graduated from State University of New York at Binghamton **Cum Laude**.
- **6 times** recipient of **Dean's List Award**. 2002-2006.
- Awarded membership in **Upsilon Pi Epsilon (UPE) Computer Science National Honor Society**.

Interviewed and/or Featured by the Following Media Outlets:

- ❑ TechCrunch
- ❑ China Global Television Network
- ❑ New Tang Dynasty Television
- ❑ Orange County Register
- ❑ Engineering360
- ❑ Due
- ❑ Inflow
- ❑ Nasdaq
- ❑ Daily Titan
- ❑ CSUF News

Unfunded Grant Proposals

- Have submitted unfunded grant proposals to the Sloan Foundation, SONY, Cisco, Motorola, California Department of Corrections, and NSF.

Research and Grants in Progress

- "A Survey of Biometrics-Based Machine Learning Applications in the Smart Classroom" paper targeting the *IEEE Access Journal*
- Security Curriculum Development, Governors Office to fund the CAE-CD and CCCEPPP efforts, $700,000.
- NSF EDU grant for to fund the development of the biometrics certificate program.

Wenlin Han

Department of Computer Science
California State University, Fullerton
whan@fullerton.edu
http://ecs.fullerton.edu/~whan/

Short Bio

Wenlin Han is currently a tenure-track assistant professor, with the Department of Computer Science, California State University, Fullerton, USA. She received her Ph.D. and MS degree in the Department of computer science, The University of Alabama, and MS and BS degree in the Department of Computer Science, Central China Normal University, China. Her research interests include Cybersecurity, Applied Cryptography used in IoT, CPS, Blockchain and other latest applications. She has been publishing papers in very competitive venues with one best paper runner-up award. She has served as an editor, PC member or reviewer for various top conferences and journals. She has been devoting herself into building a broader impact for women in information security profession.

Education and Work Experience

Tenure-track assistant professor, Department of Computer Science, California State University, Fullerton, USA, 2017 - now
Ph. D. Computer Science, The University of Alabama, USA, 2012-2017
M.S. Computer Science, The University of Alabama, USA, 2012-2014
Engineer/researcher, Wuhan Ship Wireless Communication Research Institute, China, 2005-2011
M.S. Computer Science, Central China Normal University, China, 2002-2005
B.S. Computer Science, Central China Normal University, China, 1998-2002

Research Interests

Cybersecurity, Applied Cryptography used in IoT, CPS, Blockchain and other latest applications.

Publications

Peer-reviewed Journal papers

1. **Wenlin Han** and Yang Xiao, "Edge Computing Enabled Non-Technical Loss Fraud Detection for Big Data Security Analytic in Smart Grid," Journal of Ambient Intelligence and Humanized Computing, pp. 1-12, July 2019. https://doi.org/10.1007/s12652-019-01381-4.
2. **Wenlin Han** and Yang Xiao, "Deploying Throwboxes to Enhance Fault-tolerance Performance in Delay Tolerant Networks," Wireless Personal Communications, pp 1–32, December 2017.
3. **Wenlin Han** and Yang Xiao, "NFD: Non-Technical Loss Fraud Detection in Smart Grid," Computers & Security. http://dx.doi.org/10.1016/j.cose.2016.11.009. November 2016.

4. **Wenlin Han** and Yang Xiao, "Design a Fast Non-Technical Loss Fraud Detector in Smart Grid," (Wiley Journal of) Security and Communication Networks. http://dx.doi.org/10.1002/sec.1682. October 2016.
5. **Wenlin Han** and Yang Xiao, "A Novel Detector to Detect Colluded Non-Technical Loss Fraud in Smart Grid," Computer Networks, http://dx.doi.org/10.1016/j.comnet.2016.10.011. October 2016.
6. **Wenlin Han** and Yang Xiao, "IP^{2}DM: Integrated Privacy-Preserving Data Management Architecture for Smart Grid V2G Networks," Wireless Communications and Mobile Computing. http://dx.doi.org/10.1002/wcm.2740. September 2016.
7. Xiaoming Wu, Yinglong Wang, Fuqiang Wang, Peng Zeng, Yang Xiao, and **Wenlin Han**, "Time Synchronization Scheme for Wireless Sensor Networks with a Mobile Node," Ad Hoc & Sensor Wireless Networks. Vol. 36, pp. 175–191, 2017.
8. **Wenlin Han** and Yang Xiao, "Privacy Preservation for V2G Networks in Smart Grid: A Survey," Computer Communications, 91–92 (2016) 17–28. http://dx.doi.org/10.1016/j.comcom.2016.06.006 ***one of the top 1.00% most-cited articles published in Computer Science in 2016***
9. Junhan Yang, Bo Su, Chaoping Guo, **Wenlin Han** and Yang Xiao, "Provably Secure CL-KEM Based Password-Authenticated Key Exchange Protocol", International Journal of Sensor Networks. Vol. 23, No. 2, 2017, pp.113-122. DOI: 10.1504/IJSNET.2016.1000140.
10. Julius Jow, Yang Xiao and **Wenlin Han**, "A Survey of Intrusion Detection in Smart Grid," International Journal of Sensor Networks 23 (3), 170-186, 2017.
11. Jing Liu, **Wenlin Han** and Yang Xiao, "Enhancements of Temporal Accountability in Medical Sensor Networks," Adhoc & Sensor Wireless Networks vol. 37, 2017.
12. Lei Zeng, Yang Xiao, Hui Chen, Bo Sun, and **Wenlin Han**, "Computer Operating System Logging and Security Issues: A Survey," (Wiley Journal of) Security and Communication Networks. October 2016. http://dx.doi.org/10.1002/sec.1677.
13. Zhao Wu, Naixue Xiong, **Wenlin Han**, Yan N. Huang, Chun Y. Hu, Qiong Gu and Bo Hang, "A Fault-tolerant Method for Enhancing Reliability of Services Composition Application in WSNs Based on BPEL," International Journal of Distributed Sensor Networks, special issue on "Fault-Tolerant and Ubiquitous Computing in Sensor Networks", Volume 2013, Article ID 493678, 2013. http://dx.doi.org/10.1155/2013/493678.
14. Mingbiao Li, **Wenlin Han**, Jong Hyuk Park, Naixue Xiong and Zhonghua Li, "The effect and strategy research of the secure E-commerce by the application of P2P," Mathematical and Computer Modelling 54(1-2): 175-183 (2011).
15. Naixue Xiong, **Wenlin Han** and Art Vandenberg, "Green cloud computing schemes based on networks: a survey", Special Issue on "Pervasive Healthcare Services using Intelligent Environments", IET Communications - Volume: 6, Issue: 18, pages: 3294 - 3300, 2012.

Book/book chapter

16. **Wenlin Han**. The Role of Blockchain and Cryptocurrency in Smart Grid – Renewable Energy Trading, System Security and Privacy Preservation. In Handbook of Energy Systems. Springer. Accepted, Oct. 2020.

17. **Wenlin Han** and Yang Xiao. Cybersecurity in Internet of Things - Big Data Analytics. In Big Data Analytics for Cybersecurity. Taylor & Francis Group, ISBN 9781498772129, September 26, 2017.

Peer-reviewed Conference papers

18. **Wenlin Han**, Viet Duong, Long Nguyen, Caesar Mier, "Darknet and Bitcoin De-anonymization: Emerging Development," IEEE 2020 Zooming Innovation in Consumer Technologies Conference (ZINC), pp. 222-226, Virtual, May 2020.
19. **Wenlin Han**, Madhura Ansingkar, "Discovery of Elsagate: Detection of Sparse Inappropriate Content from Kids Videos," IEEE 2020 Zooming Innovation in Consumer Technologies Conference (ZINC), pp. 46-47, Virtual, May 2020.
20. **Wenlin Han**, Yugali Bafna, "Automatic Privacy Preservation for User-based Data Sharing on Social Media," IEEE 2020 Zooming Innovation in Consumer Technologies Conference (ZINC), pp. 227-230, Virtual, May 2020.
21. **Wenlin Han** and Varshil Mehta, "Fake News Detection in Social Networks Using Machine Learning and Deep Learning: Performance Evaluation," IEEE International Conference on Industrial Internet (IEEE ICII'19), Orlando, USA, Nov. 11-12, 2019.
22. Austin Draper, Aryan Familrouhani, Devin Cao, Tevisophea Heng, and **Wenlin Han**, "Security Applications and Challenges in Blockchain," IEEE International Conference on Consumer Electronics (ICCE'19), pp. 1-4, Las Vegas, USA, Jan. 11-13, 2019.
23. Connor O'Donnell and **Wenlin Han**, "Recent Developments and Emerging Challenges in Deep Neural Networks for Cybersecurity and Other Applications," The 20th International Conference on Artificial Intelligence (ICAI'18), pp. 112-118, Las Vegas, USA, July 30 - August 2, 2018.
24. **Wenlin Han** and Yang Xiao, "FNFD: A Fast Scheme to Detect and Verify Non-Technical Loss Fraud in Smart Grid," International Workshop on Traffic Measurements for Cybersecurity (WTMC'16) in conjunction with AsiaCCS'16, Pages 24-34, May 30 - June 3, 2016, Xi'an, China. DOI: http://dx.doi.org/10.1145/2903185.2903188.
25. **Wenlin Han** and Yang Xiao, "CNFD: A Novel Scheme to Detect Colluded Non-Technical Loss Fraud in Smart Grid," The 11th International Conference on Wireless Algorithms, Systems, and Applications (WASA 2016), Pages 47-55, Bozeman, Montana, USA, August 8-10, 2016.
26. **Wenlin Han** and Yang Xiao,"CO2: Design Fault-tolerant Relay Node Deployment Strategy for Throwbox-based DTNs," The 11th International Conference on Wireless Algorithms, Systems, and Applications (WASA 2016), Pages 37-46, Bozeman, Montana, USA, August 8-10, 2016. (Best paper runner-up award).
27. **Wenlin Han** and Yang Xiao, "Big Data Security Analytic for Smart Grid with Fog Nodes," In Proceedings of the 9th International Conference on Security, Privacy and Anonymity in Computation, Communication and Storage (SpaCCS 2016), Zhangjiajie, China, Pages 59-69, November 16-18, 2016.
28. **Wenlin Han** and Yang Xiao, "Combating TNTL: Non-Technical Loss Fraud Targeting Time-based Pricing in Smart Grid," The 2nd International Conference on Cloud Computing and Security (ICCCS 2016), Pages 48-57, Nanjing, China, July 29-31 2016.

29. **Wenlin Han** and Yang Xiao, "Non-Technical Loss Fraud in Advanced Metering Infrastructure in Smart Grid," The 2nd International Conference on Cloud Computing and Security (ICCCS 2016), Pages 163-172, Nanjing, China, July 29-31 2016.
30. **Wenlin Han** and Yang Xiao, "IP^{2}DM for V2G Networks in Smart Grid," In Proceedings of the 2015 International Conference on Communications (ICC'15), pages 782–787, London, UK, June 2015.
31. **Wenlin Han** and Yang Xiao, "NFD: A Practical Scheme to Detect Non-Technical Loss Fraud in Smart Grid," In Proceedings of the 2014 International Conference on Communications (ICC'14), pages 605–609, Sydney, Australia, June 2014.
32. **Wenlin Han**, Wei Xiong, Yang Xiao, M. Ellabidy, A. V. Vasilakos, and Naixue Xiong, "A class of Non-statistical Traffic Anomaly Detection in Complex Network Systems" International Workshop on Network Forensics, Security and Privacy (NFSP'12) in conjunction with ICDCS'12, pages 640-646, Macau, China, June 2012.

Scholarly presentation

IEEE NFSP'12; WASA'16; ICAI'18; IEEE ICCE'19; IEEE ICII'19, etc.

Conference presentation and attendance

IEEE NFSP'12; WASA'16; IEEE S&P'18; ICAI'18; IEEE ICCE'19; IEEE ICII'19; IEEE IPSN'20; IEEE SusTech'20, etc.

Grant/proposal submitted

NSF_RUI 2017; NSF CCRI 2018-19; NIJ-2020-17275

Academic Service

PC member

IEEE BDS'20, IEEE ZINC'20&21; IEEE ICCE-Berlin'19; IEEE ISCT'19; IEEE BigDataService'19; IEEE ICNAS'2019; IEEE ICCE'19; ACM_MidSE_2017; IEEE ICPADS 2017; ACM_MidSE_2016; IEEE Parlearning'14; IEEE MLAA'15; IEMTRONICS 2020

Editorial Board

Energies, ISSN: 0360-5442, 2021-
International Journal of Information and Communication Sciences (IJICS), ISSN Print: 2575-1700
ISSN Online: 2575-1719, 2018 – 2020
Journal of Autonomous Intelligence, 2019

Academic chair/organizer

ICAI'18 session chair

Reviewer

1. International Journal of Electrical Power & Energy Systems, Outstanding Reviewer, 2017-19
2. IEEE Transactions on Big Data, 2019
3. Information Science 2013-2019
4. IEEE Transactions on Information Forensics & Security, 2016, 2018
5. IEEE GLOBALCOM 2019; IEEE ISCT 2019; IEEE PIMRC 2019
6. Computer Standards & Interfaces, 2017
7. Energies 2017, 2018
8. ICT Express, 2017
9. Data, 2018
10. Journal of Ambient Intelligence and Humanized Computing (AIHC), 2018
11. IEEE Transactions on Automation Science and Engineering, 2017
12. IEEE Wireless Communications and Networking Conference (WCNC), 2017, 2018
13. IEEE Network Magzine 2016
14. Springer's Applied Sciences (book proposal) 2016
15. Journal of Network and Computer Applications 2016, 2017
16. Milcom 2014, 2015
17. IEEE INFOCOM'14 2014
18. IEEE Transactions on Cloud Computing 2013
19. Journal of Computer 2013
20. IEEE Transactions on Neural Networks and Learning Systems 2013
21. International Journal of Sensor Networks 2013, 2016, 2017
22. Journal of Applied Mathematics 2013
23. Sensors 2018
24. International Journal of Internet Technology and Secured Transactions (IJITST) 2018
25. IEEE IoT journal 2018-19
26. IEEE SouthEast Conference 2018
27. International Journal of Distributed Sensor Networks 2013, 2017, 2018

Membership

1. IEEE Cybersecurity Community
2. IEEE Computer Society Technical Committee on Security and Privacy
3. IEEE Internet of Things Community
4. IEEE Computer Society Technical Community on Smart Grid

Awards and Honors

1. Outstanding Reviewer, IJEPES, 2018
2. Best Paper Runner-up Award, The 11th International Conference on Wireless Algorithms, Systems, and Applications (WASA 2016)

3. Outstanding Graduate Researcher Award, The University of Alabama, 2017
4. Travel Grant from Graduate School, The University of Alabama, 2016
5. Outstanding Undergraduate Student Research Award, Central China Normal University, 2001
6. Bronze Medal, "Challenge Cup" The 2nd National College Student Business Plan Competition, 2000
7. The Second Prize, China Undergraduate Mathematical Contest in Modeling, 2001
8. Outstanding Student Award, Central China Normal University, 1999, 2000, 2001
9. Outstanding Student Scholarship, Central China Normal University, 1999, 2000, 2001

Courses Proposed

CPSC 559 – Advanced Blockchain Technologies

Courses Taught

- CPSC 459 – Blockchain Technologies, CSUF, since Spr'20
- CPSC 351: Operating System Concepts, instructor, CSUF, Sum'19, Fall'19
- CPSC 481: Artificial Intelligence, instructor, CSUF, Fall'17-Fall'19
- CPSC 332: File Structure and Database Systems, instructor, CSUF, Fall'17
- CPSC 131: Data Structures, instructor, CSUF, Spr'18
- Basic Computer Security, Volunteer instructor, OLLI, 2016 Summer & Fall
- CS201 Data Structures and Algorithms, TA, The University of Alabama, 2016 Spring & Fall
- CS360 Data Structures and Algorithms, TA, The University of Alabama, 2015 Fall
- CS250 Programming II, TA, The University of Alabama, 2015 Spring
- CS260 Foundations of Computer Science, TA, The University of Alabama, 2015 Spring, 2014 Fall & Spring, 2013 Fall
- CS202 Internet Applications, TA, The University of Alabama, 2013 Spring, 2012 Fall

Teaching Certificate

Teaching and Learning certificate, IMPACT certificate, TCHLRN certificate

University/College/Department Service

- ECS Image Improvement Advisory Committee, Chair, 2018-19 AY
- CS IRC, Chair, 2018-19, 2019-20 AY
- CS Senior Design Project Coordinator, 2019-20 AY
- CS Graduate Committee, 2018-19 AY
- CS Assessment Committee, 2018-19, 2019-20 AY
- CS Ad-hoc Committee of Cybersecurity Concentration, 2018-19 AY
- ECS Commencement Committee, 2019
- Faculty advisor of OSS, 2018-20 AY
- Faculty advisor of Video Game Development Club, 2017-18 AY

- Faculty advisor of ACM-W, since Fall'17
- NCWIT (National Center for Women & Information Technology) CSUF faculty representative, since Fall'17

Community Service

- STEM-EXPO exhibition, Fullerton CA, Fall'17
- OLLi (Osher Lifelong Learning Institute), volunteer instructor, Tuscaloosa AL, 2016 Summer & Fall
- Hour of Code, Tuscaloosa AL, 2017 Summer
- Robotics training and contest for K-12 students, Tuscaloosa AL, 2017 Summer

Media report

- Digital Currency: The Future of Money?
- Computer Scientist Focuses on Training 'Internet of Things' Security Experts
- Cybersecurity Scholars Share Safeguards to Ensure Your Vote Counts

Student Supervision

Student award/achievement/news

- Yugali Bafna accepted an offer from Amazon. 2019. Congratulations!
- Varshil Mehta's paper (graduate student CPSC 481-04 Fall'18) accepted by IEEE ICII'19.
- Jiacheng Li (MS) recommended and admitted to Ph.D. program of University of Alabama, Tuscaloosa, with full scholarship, 2019.
- Arshya Sharifian (graduate student CPSC 481-04 Spr'18): his AI course project "Artificial Intelligence: Los Angeles Property Investment" won the third place and $750 Scholarship in CSUF Startup Competition Awards, April 2018.
  https://business.fullerton.edu/Center/Entrepreneurship/Business-Plan-Competition/BusinessCompetitionResults
  more info:
  https://business.fullerton.edu/Center/Entrepreneurship/Business-Plan-Competition/BusinessCompetitionAwards
- Connor O'Donnell (graduate student CPSC 481-01 Fall'17): his AI course paper (after revision) was published at an international conference.
  - Connor O'Donnell and **Wenlin Han**, "Recent Developments and Emerging Challenges in Deep Neural Networks for Cybersecurity and Other Applications," The 20th International Conference on Artificial Intelligence (ICAI'18), pp. 112-118, Las Vegas, USA, July 30 - August 2, 2018.
- Austin Draper, Aryan Familrouhani, Devin Cao, and Tevisophea Heng (undergraduate students CPSC 481-03 Spr'18): their course paper (after revision) was submitted to an international conference

- Austin Draper, Aryan Familrouhani, Devin Cao, Tevisophea Heng, and **Wenlin Han**, "*Security Applications and Challenges in Blockchain,"* IEEE International Conference on Consumer Electronics (ICCE'19).

Floyd Holliday’s CV is regrettably unavailable.

Paul Salvador Inventado, Ph.D.

Assistant Professor
Computer Science Department, College of Engineering and Computer Science
California State University, Fullerton
800 N. State College, Blvd., Fullerton, CA 92834
(657) 278-3821 (office)
pinventado@fullerton.edu

EDUCATION

Ph.D. Information Science and Technology, Osaka University, Japan 2014

M.S. Computer Science, De La Salle University, Philippines 2007

B.S. Computer Science, De La Salle University, Philippines 2005

PROFESSIONAL TRAINING

Google Faculty in Residence. Google, USA 2019

GitHub Campus Advisor. GitHub Education, USA 2018

Future Faculty Program. Eberly Center for Teaching Excellence and Educational Innovation, Carnegie Mellon University, USA 2017

Visiting/Non-degree Program. Carnegie Mellon University, USA 2016
courses taken: E-Learning Design Principles and Methods, Applied Machine Learning

EMPLOYMENT

Assistant Professor. Computer Science Department, College of Engineering and Computer Science, California State University Fullerton, USA 2017–present

Postdoctoral Researcher. School of Design, Carnegie Mellon University, USA 2014–2017

Assistant Professor. College of Computer Science, De La Salle University, Philippines 2007–2014

Instructor. College of Computer Science, De La Salle University, Philippines 2005–2007

PUBLICATIONS

Journals

1. Koleilat, M., Radcliffe, S., Kim, L., Frost, E., & **Inventado, P. S.** (2020). Postpartum Weight-Loss Tracker to Guide Low-Income Postpartum Women on their Weight-Loss Journey. *Californian Journal of Health Promotion, 18*(1), 53-59.

2. **Inventado, P.**, Scupelli, P., Ostrow, K. Heffernan, N., Almeda, V., & Slater, S. (2018) Contextual Factors Affecting Hint Utility, *International Journal of STEM Education, 5*(1), 13.

3. **Inventado, P.S.**, and Scupelli, P. (2017). Towards an open, collaborative repository for online learning system design patterns. *International Journal on Interaction Design & Architecture(s) (IXD&A)*, 33, 11 - 32.

4. **Inventado, P.S.** and Scupelli, P. (2015). Towards an open, collaborative repository for online learning system design patterns. *eLearning Papers*, *42*(1), 14-27.

5. **Inventado, P. S.**, Legaspi, R., Moriyama, K., Fukui, K. I., and Numao, M. (2014). Sidekick: A tool for helping students manage behavior in self-initiated learning scenarios. *International Journal of Distance Education Technologies (IJDET)*, *12*(4), 32-54.

6. Cabredo, R., Legaspi, R. S., **Inventado, P. S.**, and Numao, M. (2013). Discovering Emotion-Inducing Music Features Using EEG Signals. *Journal of Advanced Computational Intelligence and Intelligent Informatics (JACIII)*, *17*(3), 362-370.

7. **Inventado, P. S.**, Legaspi, R., Suarez, M., and Numao, M. (2011). Predicting student emotions resulting from appraisal of ITS feedback. *Research and Practice in Technology Enhanced Learning*, *6*(2):107-133.

Book Chapters

1. Baker, R.S. and **Inventado, P.S.** (2016). Educational data mining and learning analytics: Potentials and possibilities for online distance education. In G. Veletsianos (Ed.), *Emergence and Innovation in Digital Learning: Foundations and Applications* (pp. 83-98). Edmonton: Athabasca University Press.

2. Baker, R. S. and **Inventado, P.S.** (2014). Educational data mining and learning analytics. In Lárusson, J. A. and White, B. (Eds.), *Learning Analytics: From Research to Practice, Computer-Supported Collaborative Learning Series* (pp.61-75). New York, NY: Springer New York.

Conference Full Papers

1. Jiang, Y., Almeda, M. V., Kai, S., Baker, R. S., Ostrow, K., **Inventado, P. S.**, & Scupelli, P. (2020). Single Template vs. Multiple Templates: Examining the Effects of Problem Format on

Performance. In *Proceedings of the International Conference of the Learning Sciences (ICLS 2020)*.

2. Köppe, C., Kohls, C., Pedersen, A.Y., Nørgård, R.T., **Inventado, P.S.** (2018). Hybrid Collaboration Patterns. In *Proceedings of the 25th Conference on Pattern Languages of Programs (PLoP 2018)*. The Hillside Group.

3. **Inventado, P.S.**, Francisco Inventado, S.G., Matsuda, N., Li, Y., Scupelli, P., Ostrow, K., Heffernan, N., Tu, S., Mason, C., Logue, M., and McGuire, P. (2018). Using Design Patterns for Math Preservice Teacher Education. In *Proceedings of the 23rd European Conference on Pattern Languages of Programs (EuroPLoP 2018)*. ACM.

4. **Inventado, P.S.**, Scupelli, P., Heffernan C., and Heffernan, N. (2017). Feedback Design Patterns for Math Online Learning Systems. In *Proceedings of the 22nd European Conference on Pattern Languages of Programs (EuroPLoP 2017)*. ACM.

5. **Inventado, P.S.** and Scupelli, P. (2016). Patterns for learning-support design in math online learning systems. In *Proceedings of the 23rd Conference on Pattern Languages of Programs (PLoP 2016)*. The Hillside Group.

6. Köppe, C., **Inventado, P.S.**, Scupelli, P., van Heesch, U., Hoppenbrouwers, S. (2016). Towards Common Requirements for an Online Design Pattern Repository. In *Proceedings of the 23rd Conference on Pattern Languages of Programs (PLoP 2016)*. The Hillside Group.

7. **Inventado, P.S.** and Scupelli, P. (2016). Design patterns for helping students to learn to represent math problems in online learning systems. In *Proceedings of the 21st European Conference on Pattern Languages of Programs (EuroPLoP 2016)*. ACM.

8. **Inventado, P.S.** and Scupelli, P. (2016). Design patterns for math problems and learning support in online learning systems. In *Proceedings of the 21st European Conference on Pattern Languages of Programs (VikingPLoP 2016)*. ACM.

9. Slater, S., Ocumpaugh, J., Baker, R., Scupelli, P., **Inventado, P.S.**, Heffernan, N. (2016) Semantic Features of Math Problems: Relationships to Student Learning and Engagement. In *Proceedings of the 9th International Conference on Educational Data Mining* (pp. 223-230).

10. **Inventado, P.S.** and Scupelli, P. (2015). Data-driven design pattern production: A case study on the assistments online learning system. In *Proceedings of the 20th European Conference on Pattern Languages of Programs (EuroPLoP 2015)*. ACM.

11. **Inventado, P.S.** and Scupelli, P. (2015). A Data-driven methodology for producing online learning system design patterns. In *Proceedings of the 22nd Conference on Pattern Languages of Programs (PLoP 2015)*. The Hillside Group.

12. **Inventado, P. S.**, Legaspi, R., Cabredo, R., and Numao, M. (2013). Sidekick retrospect: A self-regulation tool for unsupervised learning environments. In *Theory and Practice of Computation (Volume 7 of Proceedings of Information and Communications Technology)* (pp. 195-205). Springer Japan.

13. **Inventado, P.S.**, Legaspi, R., Moriyama, K., Fukui, K., and Numao, M. (2013). Modeling affect in self-directed learning scenarios. In *Proceedings of 4th Int'l Workshop on Empathic Computing*.

14. **Inventado, P.S.**, Legaspi, R., Moriyama, K., Fukui, K., Numao, M. (2013). Building policies for supportive feedback in self-directed learning scenarios. In *Proceedings of Workshop on Computation: Theory and Practice* (pp. 144-155). World Scientific.

15. **Inventado, P.S.**, Legaspi, R., Moriyama, K., Fukui, K., Numao, M. (2013). An architecture for identifying and using effective learning behavior to help students manage learning. In *AIED Workshop Proceedings: Formative Feedback in Interactive Learning Environments*.

16. Vachiratamporn, V., **Inventado, P.S.**, Legaspi, R., Moriyama, K., & Numao, M. (2013). An analysis of affective state transitions in survival horror game with the aid of player self-reports and physiological signals. In *Proceedings of The 27th Annual Conference of the Japanese Society for Artificial Intelligence*.

17. Cabredo, R., Legaspi, R. S., **Inventado, P. S.**, and Numao, M. (2012). An Emotion Model for Music Using Brain Waves. In *13th International Society for Music Information Retrieval Conference (ISMIR)* (pp. 265-270).

18. **Inventado, P. S.**, Legaspi, R., Cabredo, R., and Numao, M. (2012). Modeling affect and intentions in unsupervised learning environments. In *Proceedings of the 3rd Int'l Workshop on Empathic Computing*.

19. **Inventado, P. S.**, Legaspi, R., Cabredo, R., and Numao, M. (2012). Student learning behavior in an unsupervised learning environment. In *Proceedings of the 20th International Conference on Computers in Education* (pp. 730-737). **(Best Technical Design Paper Award)**

20. **Inventado, P. S.**, Legaspi, R., Suarez, M., and Numao, M. (2012). Categorizing and comparing behaviors of students engaged in self-initiated learning online. In *Theory and practice of computation (Volume 5 of Proceedings in Information and Communications Technology)* (pp. 133-144). Springer, Japan.

21. Mai, A., Legaspi, R., **Inventado, P.S.**, Cabredo, R., Kurihara, S., & Numao, M. (2012). A Model for Sitting Postures in Relation to Learning and Non-learning Behaviors. In *Proceedings of The 26th Annual Conference of the Japanese Society for Artificial Intelligence*.

22. **Inventado, P. S.**, Legaspi, R., Suarez, M., and Numao, M. (2011). Investigating transitions in affect and activities for online learning interventions. In *Proceedings of the 19th Conference on Computers in Education* (pp. 571-578). **(Nominated for Best Student Paper Award)**

23. **Inventado, P. S.**, Legaspi, R., Suarez, M., and Numao, M. (2011). Observatory: A tool for recording, annotating and reviewing emotion-related data. In *Third International Conference on Knowledge and Systems Engineering* (pp. 261-265). IEEE.

24. Azcarraga, J., Suarez, M.T., and **Inventado, P.S.** (2010). Predicting the Difficulty Level Faced by Academic Achievers based on Brainwave Analysis. In *Proceedings of the 18th International Conference on Computers in Education* (pp. 107-109).

25. Cu, J., Cabredo, R., Cu, G., Legaspi, R., **Inventado, P. S.**, Trogo, R., and Suarez, M. T. (2010). The TALA empathic space: integrating affect and activity recognition into a smart space. In *3rd International Conference on Human-Centric Computing (HumanCom)* (pp. 1-6). IEEE.

26. **Inventado, P. S.**, Legaspi, R., Bui, T. D., and Suarez, M. (2010). Predicting student's appraisal of feedback in an ITS using previous affective states and continuous affect labels from EEG data. In *Proceedings of the 18th International Conference on Computers in Education* (pp. 71-75).

27. **Inventado, P.S.**, Suarez, M.T. and Legaspi, R. (2010). Tracking and modelling the behavior of students in learning online. In *Proceedings of the 10th Philippine Computing Science Congress*.

28. **Inventado, P. S.**, Suarez, M., and Legaspi, R. (2010). Identifying student appraisal of feedback provided by an ITS using system logs and brainwave data. In *Proceedings of the 15th Joint Academic Research Symposium of De La Salle and Osaka University*.

29. **Inventado, P.S.** (2009). Tracking digital natives' online learning behavior. In *Proceedings of the Osaka University - De La Salle University Academic Research Workshops*.

30. **Inventado, P.S.** and See, S. (2009). Ai Cap'n: A game platform for learning artificial intelligence. In *Proceedings of 2009 9th Philippine Computing Science Congress*.

31. Roxas, R., **Inventado, P.S.**, Asenjo, G., Corpus, M., Dita, S., Sison-Buban, R. and Taylan, D. (2009). Online corpora of Philippine languages. In *Proceedings of the 2009 DLSU Art Congress*.

Conference Short Papers and Posters

1. Bautista, P., & **Inventado, P. S.** (2021). Protecting Student Privacy with Synthetic Data from Generative Adversarial Networks. In *International Conference on Artificial Intelligence in Education*. Springer, Cham.

2. **Inventado, P.S.** (2019). Promoting Mastery Learning in an Introductory Programming Course. In *Proceedings of the 2019 ACM SIGCSE Technical Symposium on Computer Science Education*. ACM.

3. **Inventado, P.S.** (2019). *Exploring the use of unit tests, linters, and format checkers to enhance computer-programming instruction*. Talk presented at the SPLICE Spring 2019 Workshop, Minneapolis, MN.

4. **Inventado, P.S.** (2019). *A GitHub-Hosted Programming Problem Repository: Helping instructors create, check, and give feedback on programming problems in the classroom.* Talk presented at SIGCSE 2019 Supporter Session - GitHub's Get to near-total automation with GitHub: Teacher stories, Minneapolis, MN.

5. **Inventado, P.S.**, and Scupelli, P. (2017). Towards a Community-Centric Pattern Repository. In *Proceedings of the 22nd European Conference on Pattern Languages of Programs (EuroPLoP 2017)*. ACM.

6. **Inventado, P.S.**, Scupelli, P., Van Inwegen, E., Ostrow, K., Heffernan, N., Baker, R.S., Slater, S., Almeda, M.V., Ocumpaugh, J. (2016). Hint Availability slows completion times in summer work. In *Proceedings of the 9th International Conference on Educational Data Mining* (pp. 388-393).

7. **Inventado, P.S.** and Scupelli, P. (2016). *A data-driven design pattern methodology to facilitate effective pedagogical practice in online learning systems*. Poster session presented at: CMU Teaching and Learning Summit, Pittsburgh, PA, USA.

8. **Inventado, P.S.** and Scupelli, P. (2015). *Addressing MOOCs' sustainability issues using data-driven design pattern production*. Poster session presented at: Learning with MOOCs II, New York, NY, USA.

9. **Inventado, P.S.**, Legaspi, R., Moriyama, K., Fukui, K., Numao, M. (2013). Identification of effective learning behaviors. In *Artificial Intelligence in Education (Volume 7926 of Lecture Notes in Computer Science)* (pp. 670-673). Springer Berlin Heidelberg.

10. **Inventado, P.S.**, Legaspi, R., Moriyama, K., Fukui, K., Numao, M. (2013). Building incremental affect models to help students annotate and analyze their behavior in self-directed learning scenarios. In *Proceedings 20th Conference on Computers in Education* (pp. 170-172).

11. **Inventado, P. S.**, Legaspi, R. S., Suarez, M., and Numao, M. (2011). Investigating the transitions between learning and non-learning activities as students learn online. In *4th International Conference on Educational Data Mining* (pp. 367-368).

12. **Inventado, P.S.**, Suarez, M.T. and Legaspi, R. (2009). Modelling digital natives in social learning environments. In *Proceedings of the 17th International Conference on Computers in Education (ICCE 2009)* (pp. 199-201).

13. Legaspi, R., **Inventado, P.S.**, Cabredo, R., & Numao, M. (2012). Aiding digital natives learn positive learning behaviors through reflection. In *Proceedings of the 20th International Conference on Computers in Education (ICCE 2012)* (pp. 806-810).

Talks and Presentations

1. **Inventado, P.** and Monge, A. (2019). Navigating the CS Major: Student and Faculty Best Practices. Birds-of-a-Feather presented at the ACM Richard Tapia Celebration of Diversity in Computing 2019, San Diego, CA.

2. **Inventado, P. (2019).** Promoting Mastery Learning in an Introductory Programming Course. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education (SIGCSE 2019)* (pg. 1285)

3. **Inventado, P. (2019).** *Exploring the use of unit tests, linters, and format checkers to enhance computer-programming instruction.* Talk presented at the SPLICE Spring 2019 Workshop, Minneapolis, MN.

4. **Inventado, P. (2019).** *A GitHub-Hosted Programming Problem Repository: Helping instructors create, check, and give feedback on programming problems in the classroom.* Talk presented at SIGCSE 2019 Supporter Session - GitHub's Get to near-total automation with GitHub: Teacher stories, Minneapolis, MN.

Theses

1. **Inventado, P.S.** (2014). *Helping Students Manage Learning Behavior in Self-initiated Learning Scenarios* (Doctoral Dissertation). Adviser: Professor Masayuki Numao.

2. **Inventado, P.S.** (2007). *Disambiguating Novice Object Oriented Programming Errors* (Masters Thesis). Adviser: Professor Merlin Suarez.

3. **Inventado, P.S.** (2005). *DIGMA: A Role Playing Game with Plan Reformulation and Situational Reassessment* (Undergraduate Thesis). Adviser: Professor Merlin Suarez.

GRANTS

Research, Scholarship and Creative Activity (RSCA) Award, California State University Fullerton, 2019 ($15,000.00). Development and Assessment of a Mobile Application for Assisting WIC Participants with Weight Loss After Childbirth. Co-Principal Investigator

NCWIT Extension Services Mini-Grant, NCWIT, 2019 ($10,000.00). Start-up implementation of strategies to recruit and retain women in computing and engineering departments. Co-Principal Investigator.

GI2025 Innovation Grant, California State University Fullerton, 2019 ($9,500.00). Promoting Practice and Timely Feedback in Introductory Programming Courses. Principal Investigator

Junior/Senior Faculty Grant, California State University Fullerton, 2018 (3 units of reassigned time). Investigating Factors that Lead to Learning Challenges in CS Education. Principal Investigator.

Faculty Enhancement and Instructional Development (FEID) Grant, California State University Fullerton, 2018 (3 units of reassigned time). Building a Programming Problem Repository that Facilitates Personalization and Timely Feedback. Principal Investigator.

AWARDS

Best Paper and Young Researcher Award. Journal of Advanced Computational Intelligence and Intelligent Informatics (JACIII) 2016

Best Technical Design Paper Award. 20th International Conference on Computers in Education 2012

Monbukagakusho (Japanese Government) Ph.D. Scholarship. Osaka University 2010–2014

TEACHING EXPERIENCE

Undergraduate courses, California State University Fullerton

CPSC 411	Mobile Device Application Programming (Fall 2021 - Spring 2022)
CPSC 223W	Swift Programming (Spring 2021 - Spring 2022)
CPSC 121	Object-Oriented Programming (Spring 2018 - Fall 2020)
CPSC 481	Artificial Intelligence (Summer 2018, Summer 2019)
CPSC 456	Network Security Fundamentals (Spring 2019)
CPSC 223J	Java Programming (Fall 2017)
CPSC 254	Software Development with Open Source Systems (Fall 2017)

Graduate courses, De La Salle University*

Theory and Concepts of Programming Languages (2nd Term 2008)
Logic Formulation (1st Term 2007)
Object-Oriented Programming (2nd Term 2006)

Undergraduate courses, De La Salle University*

Machine Learning (2nd Term 2009)
Introduction to Programming (2nd Term 2009, 2nd Term 2008, 1st Term 2008, 1st Term 2007)
Computers for Math Majors (2nd Term 2009, 2nd Term 2007)
Object-Oriented Programming (3rd Term 2008, 3rd Term 2007, 1st Term 2007)
Open Source Software Development (3rd Term 2008, 1st Term 2007)
Introduction to Artificial Intelligence (1st Term 2008)
Design Patterns (1st Term 2008, 1st Term 2007, 1st Term 2006)
Theories and Concepts of Programming Languages (3rd Term 2006, 1st Term 2005)
Advanced C Programming (2nd Term 2006)

*1st Term: Aug–Dec; 2nd Term: Jan–Apr; 3rd Term: May–Aug

INDUSTRY COLLABORATION

Co-instructor, CPSC 121 collaboration with Google Engineer, Google-In-Residence Program, Google, Fall 2020

STUDENT ADVISING

Director. Intelligent Learning Experiences Lab 2018 - present

Advisor. Video Game Development Club 2018 - present

Advisor. Data Science and Machine Learning Club 2018 - present

Advisor. Developer Student Club 2020 - present

Graduate student research

1. Lee, E. *Using Generative Adversarial Networks for Educational Data Mining*., Independent Study Adviser,
2. Babaie, A. *Smart Parking*. Master's Project Adviser, Fall 2020
3. Bautista, P. *An Evaluation of Deep Learning Methods for Real and Synthetic Data Modeling*. Independent Study Adviser, Fall 2020.
4. Bautista, J., *Education Data Generation with Generative Adversarial Networks*. Master's Project Adviser, Fall 2020
5. Chin, J. *Towards an automated pipeline for neuronal reconstruction of fluorescence microscopy images*. Master's Project Reviewer, Fall 2020.
6. Ishii, J. *Investigative and Application Research Into Deep Learning*. Independent Study Adviser, Fall 2020.
7. Johnston, M. *Learning Analytics: Using Machine Learning to Predict and Analyze Student Grades*. Master's Project Adviser, Fall 2020.
8. Traboulsi, N. *Identifying Deepfakses and Potential Hazards*. Master's Project Reviewer, Fall 2020.
9. Panjri, M. *Optical Character Recognition for Handwritten Mathematical Expressions*. Master's Project Adviser, Spring 2020.
10. Bhore, J. *Bone Fracture X-Ray Classification using Transfer Learning*. Independent Study Adviser, Spring 2020.
11. Bhore, J. *Autonomous Vehicle Using Deep Learning and Edge Computing*. Master's Project Reviewer, Spring 2020.
12. Johnston, M. *Predicting Student Performance*. Research Adviser, Spring 2020.
13. Ishii, J. *Uncovering Relationships Between Student Performance Across Courses*. Research Adviser, Spring 2020.
14. Bautista, P. *Using Generative Adversarial Neural Networks to Generate Student Data*. Research Adviser, Spring 2020.
15. Zhang, X. *Using Technology to Support Students with ADHD*. Research Adviser, Spring 2020.
16. Kitisopakul, S. *Topic Modeling*. Master's Project Adviser, Fall 2019.
17. Perez-Mendoza, R. *Smart Childcare Management Software and Auto Attendance Using Face Recognition*. Master's Project Adviser, Fall 2019.
18. Aghazadah, M. *Enhancing Gaming Experience Through Biofeedback Input*. Master's Project Adviser, Spring 2019.
19. Martinez, Y. *Text Verification Of Scene Text In Natural Images Using Deep Learning For Assistive Applications*. Master's Project Adviser, Spring 2019.

20. Shieh, P. *Phone Tree Wizard: A Call Menu Navigation Software Tool*. Master's Project Adviser, Spring 2019.
21. Paduel, P. *Customer centric recommender system for books using hybrid (combination of collaborative and content based) approach.* Master's Project Adviser, Fall 2018.
22. Mishra, S. *Human activity recognition system.* Master's Project Reviewer, Spring 2018.
23. Nataraj, P.K. *MyVision.* Master's Reviewer, Spring 2018.

Undergraduate student research

1. Lee, E. *Using Generative Adversarial Networks for Educational Data Mining*. Independent Study, Fall 2021
2. Jose, J. *FreeThyme*. Senior Honors Project Adviser, Fall 2020.
3. Nguyen, B. *Evaluating the Effectiveness of Modules for a Security Course at CSUF.* Independent Study Adviser, Fall 2020.
4. Rijal, R. Virtual Learning Environment for Cyber Security and Cloud Environments. Independent Study Adviser, Fall 2020.
5. Kobayashi, C., Zendejas, M., and Lieberman, A. *Analyzing Crowdsourced-Feedback for an Online Learning System.* Research Adviser, Fall 2020.
6. Ho. H, Huy, H, Orozco, G. *A Mobile Learning Application to Support Postpartum.* Research Adviser, Fall 2020.
7. Tran, M. and Tran, N. *Integrating an Automated Programming Problem Repository with Learning Management Systems.* Research Adviser, Fall 2019 - Fall 2020.
8. Nguyen, B. *Investigating the Needs of the Security Industry.* Independent Study Adviser, Spring 2020.
9. Rijal, R. *Virtual Learning Environments for Cyber Security.* Independent Study Adviser, Spring 2020.
10. Nguyen, B. *Investigating the Needs of the Security Industry.* Independent Study Adviser, Fall 2019.
11. Rijal, R. *Virtual Learning Environments for Cyber Security.* Independent Study Adviser, Fall 2019.
12. Abutaleb, R., and Gomez, A. *Waletcheck*. Independent Study Adviser, Fall 2019.
13. Hansen, L. *Early Detection of At-Risk Students in an Introductory Programming Course.* Independent Study Adviser, Fall 2019..
14. Ho, H., and Sarmiento, A. *Creating a Mobile Learning Platform.* Research Adviser, Summer 2019
15. Gonzalez, V., Macias, L, and Sharpe, B. *Creating a Game Platform for Learning AI*. Research Adviser, Spring 2019.
16. Tran, S. and To, S. *Autograding programming problems.* Research Adviser, Spring 2019.
17. Abutaleb, R., Gomez, A., and Purpura, E. *Programming problem repository front end.* Research Adviser, Spring 2019.
18. Hansen, L., Smith, L., To, S., Tran, S. *Programming problem repository project*. Research Adviser, Fall 2018.
19. Smith, L. *Unit testing and semi-automated checking of programming problems; Automated student performance analysis*. Research Adviser, Spring - Fall 2018.

SERVICE TO PROFESSION

Webmaster. International Educational Data Mining Society	2011–present
Webmaster. International Conference on Educational Data Mining	2016, 2018 - 2021
Guest editor. Special issue on "Connecting Learning Design and Learning Analytics", Interaction Design and Architecture(s) Journal (IxD&A)	2017
Proceedings chair. International Conference on Educational Data Mining	2016 & 2017

Grant Proposal Reviewing
NSF: Improving Undergraduate STEM Education (IUSE) (Spring 2019)

Program Committee
Educational Data Mining (2020, 2021)
Pacific Rim International Conferences on Artificial Intelligence (2018, 2019, 2021)
Artificial Intelligence and Education (2017 - 2021)
Workshop on Computation: Theory and Practice (2011 - 2015)
International Workshop on Empathic Computing (2010 - 2015)
Interactive Entertainment (2013 - 2018)
International Workshop on Teaching Analytics (2016)
Connecting Learning Analytics and Learning Design (2016)
International Conference on Computers in Education (2016)

Journal Reviewing
Neural Computing and Applications (2021)
Annual Conference on Research in Equity and Sustained Participation in Engineering (2020, 2021)
International Journal of Distance Education Technologies (2014 - 2020)
Transactions on Learning Technologies (2017 - 2018)
International Journal of STEM Education (2016 - 2017)
New Generation Computing (2018)
Asia Pacific Education Review (2017)
Manila Journal of Science (2017)
Philippine Information Technology Journal (2017)
PLOS ONE (2017)
Special Issue on Affective and Empathic Computing of the Philippine Computing Journal (2011)

Skills

Programming language proficiency	C/C++, Python, Java, Go, JSP, PHP, Javascript, HTML, CSS, SQL, Kotlin, Swift
Web-based framework proficiency	jQuery, Angular JS, Flask

Mobile application framework proficiency	Android Studio, XCode, UIKit, SwiftUI
Statistical software proficiency	R, SPSS
Database administration experience	MySQL, PostgreSQL, MongoDB, Cassandra, HBase
Server and cluster management	Linux, Apache, Hadoop

Rong Jin

Assistant Professor

Department of Computer Science
California State University, Fullerton
✉ *rong.jin@fullerton.edu*
Personal Website

Research Interests

• Data Science with focuses on computational social networks, graph data mining, data-driven computation, and machine learning.
• Multimedia systems with its intersections with applications in Virtual Reality, Augmented Reality, Mixed Reality, and Modeling and Simulation for training tasks in STEM education and healthcare.

Positions

08/2021 – Now **Assistant Professor**, *California State University, Fullerton*, Fullerton, CA.

2015 – 2020 **Research/Teaching Assistant**, *The University of Texas at Dallas*, Richardson, TX.

Education

2015 – 06/2021 **Ph.D., Computer Science**, *The University of Texas at Dallas, Richardson, TX*
Advisor: *Weili Wu* (weiliwu@utdallas.edu)
Additional thesis committee members: *Farokh B. Bastani, Latifur Khan, Xiaohu Guo*

2013 – 2015 **M.S., Computer Science**, *The University of Texas at Dallas, Richardson, TX*

2007 – 2011 **B.E., Communication Engineering**, *Nanjing University of Posts & Telecommunications, Nanjing, China*

Refereed Publications *(1 book chapter, 4 journal papers, 5 full papers)*

1. **Rong Jin**, Weili Wu, My T. Thai, and Ding-Zhu Du. 2021. Black Box and Data-Driving Computation, a book chapter published in *Black Box Optimization, Machine Learning and No-Free Lunch Theorems*, DOI 10.1007/978-3-030-66515-9, Springer, Cham.
2. Rosanna Guadagno, Virgilio Gonzenbach, Haley Puddy, Paul Fishwick, Midori Kitagawa, Mary Urquhart, Michael Kesden, Ken Suura, Baily Hale, Cenk Koknar, Ngoc Tran, **Rong Jin**, Aniket Raj. A Usability Study of Classical Mechanics Education Based on Hybrid Modeling: Implications for Sustainability in Learning, published in *Sustainability as part of the Special Issue Modelling and Simulation of Human-Environment Interactions (**Sustainability**)*, journal paper, DOI:10.3390/su132011225, Oct. 2021.
3. **Rong Jin**, and Weili Wu. Schemes of Propagation Models and Source Estimators for Rumor Source Detection in Online Social Networks: A Short Survey of a Decade of Research, published in *Discrete Mathematics, Algorithms and Applications (**DMAA**)*, journal paper, DOI: 10.1142/S1793830921300022, April 2021.
4. Shengminjie Chen, Wenguo Yang, Suixiang Gao, and **Rong Jin**. Novel algorithms for maximum DS decomposition, published in *Theoretical Computer Science (**TCS**)*, journal paper, DOI: 10.1016/j.tcs.2020.12.041, Feb. 2021.

5. Qiufen Ni, Smita Ghosh, Chuanhe Huang, Weili Wu, and **Rong Jin**. Discount Allocation for Cost Minimization in Online Social Networks, published in *Journal of Combinatorial Optimization (**JOCO**)*, journal paper, DOI: 10.1007/s10878-020-00674-1, Jan. 2021.
6. Shengminjie Chen, Wenguo Yang, Suixiang Gao, and **Rong Jin**. Novel algorithms for maximum DS decomposition, to appear *in the 14th Annual International Conference on Combinatorial Optimization and Applications (**COCOA 2020**)*, full oral paper, Dallas, Texas, USA, December 11-13, 2020. Invited to the special issue of journal *TCS*.
7. Midori Kitagawa, Paul Fishwick, Michael Kesden, Mary Urquhart, Rosanna Guadagno, **Rong Jin**, Ngoc Tran, Erik Omogbehin, Aditya Prakash, Priyanka Awaraddi, Baily Hale, Ken Suura, Aniket Raj, James Stanfield, and Henry Vo. Scaffolded Training Environment for Physics Programming (STEPP): Modeling High School Physics using Concept Maps and State Machines, to appear *in Proceedings of the 2019 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (**SIGSIM-PADS 2019**)*, full oral paper, Chicago, Illinois, USA, June 3-5, 2019.
8. Lakshmi Sharma*, **Rong Jin**, Balakrishnan Prabhakaran, and Murry Gans. LearnDNA: An Interactive VR Application for Learning DNA Structure, to appear *in Proceedings of the 3rd International Workshop on Interactive and Spatial Computing (**IWISC 2018**)*, full oral paper, Richardson, Texas, USA, April 12-13, 2018.(* mentored master student)
9. Kevin Desai, Suraj Raghuraman, **Rong Jin**, and Balakrishnan Prabhakaran. QoE Studies on Interactive 3D Tele-Immersion, to appear *in 2017 IEEE International Symposium on Multimedia (**ISM 2017**)*, full oral paper, Taichung, Taiwan, Dec. 11-13, 2017.
10. Kevin Desai, Uriel Haile Hernndez Belmonte, **Rong Jin**, Balakrishnan Prabhakaran, Paul Diehl, Victor Ayala Ramirez, Vinu Johnson, and Murry Gans. Experiences with Multi-Modal Collaborative Virtual Laboratory (MMCVL). to appear *in 2017 IEEE Third International Conference on Multimedia Big Data (**BigMM 2017**)*, full oral paper, Laguna Hills, California, USA, April 2017.

Professional Activities

- Technical program committee member, *the 15th European Alliance for Innovation (EAI) International Wireless Internet Conference* (EAI WiCON) 2022
- Program committee member, *the 2nd annual CSCSU conference* 2022
- Journal reviewer, *ACM Transaction on Web* (TWEB) 09/2021 – Present
- Journal reviewer, *Theoretical Computer Science* (TCS) 03/2020 – Present
- Journal reviewer, *Discrete Mathematics, Algorithms and Application* (DMAA) 03/2020 – Present
- Journal reviewer, *IEEE Transactions on Multimedia* (TMM) 03/2016 – Present
- Journal reviewer, *Simulation: Transaction of the Society for Modeling and Simulation International* 2019
- Member, *Institute of Electrical and Electronics Engineers* (IEEE), 2016 – Present
- Member, *Association of Computing Machinery* (ACM), 2017 – Present

Outreach Presentations & Invited Talks

Invited Talk "A short study on propagation models and source estimators for rumor source detection in online social networks", at Workshop on Network Science and Engineering of the 15th International Conference on Algorithmic Aspects in Information and Management (**AAIM 2021**), December 22, 2021. (Virtual)

Poster STEPP presented at Integrating Computational Thinking Conference 2019, College Park, MD, May 2-5.

Poster Leveraging UTeach Dallas Outreach to Test Interactive Unity-Based Simulations for Physics Education, at the 12th Annual UTeach Conference 2018, The University Of Texas at Austin, May 22 - 24.

Demo 3rd International Workshop on Interactive and Spatial Computing (**IWISC 2018**), Richardson, TX, April 12-13.

Demo Dallas County Community College District (DCCCD) STEM Summit 2017.

Awards & Fellowships

2021 CSUF Milton A. Gordon (MAG) Reward ($5,000)

2019 ACM SIGSIM-PADS Student Travel Grant ($500)

2017 Grace Hopper Conference (GHC'17) Scholarship, UT Dallas

2017 CRA-W Graduate Cohort Scholarship

2007 - 2011 Academic Performance Fellowship, NJUPT

Grants

2021 CSUF Start-up Grant for New Faculty $45,000 (08/2021-06/2023)

2021 CSUF Professional Development Grant $1,500 (08/2021-06/2022)

Mentorship

Mentored 4 graduate students and 1 undergraduate student at least 1 academic year at UT Dallas

- Bryant Nguyen (BS'22)
- Hiranya Garbha Kumar (MS'18), After graduation: PhD at UT Dallas
- Lakshmi Sharma (MS'18), co-authored [IWISC'18], After graduation: Walmart, Twilio
- David Butler (MS'17), After graduation: SWE at Raytheon
- Scott Fontenarosa (MS'17), After graduation: SWE at Mindtree

Teaching Experience

Instructor (at California State University, Fullerton)

S'22, F'21 CPSC 323 Compilers and Languages
CPSC 589 Seminar Computer Science

Instructor (at Emporia State University)

S'21 CS 360A Programming and Problem Solving II
IS 393A Advanced Web-based Applications

Teaching Assistant (at UT Dallas)

F'20 CS 2305 Discrete Mathematics and Its Applications
CS 4384 Automata Theory

Su'20 CS 6364 Artificial Intelligence

S'20 CS 4391 Introduction to Computer Vision
CS 6384 Computer Vision

F'17 CS 4332 Introduction to Programming Video Games

S'17 CS/STAT 6301 – R for Data Scientists

Su'16, S'16 CS/STAT 6301 Advanced Computational Methods for Data Science

F'15 CS 6363 Design and analysis of Computer Algorithms

Su'15 CS 4375 Introduction to Machine Learning
CS 6375 Machine Learning

S'15 CS 4391 Introduction to Computer Vision
CS 6384 Computer Vision

Research Experience

9/2019 – 12/2020 **Research Assistant**, *Data Communication and Data Management Lab.*
(For references see the bookchapter and papers in JOCO, DMAA, COCOA2020, TCS)

Worked on theoretical measurement and optimization algorithms for data mining in online social networks and related computational social influence problems.

01/2018 – 08/2019 **Research Assistant**, *Creative Automata Lab.*
STEPP project: Learning Physics in a Synergistic Scaffolded Programming Environment (**NSF No.1741756**)
(For references see paper SIGSIM-PADS 2019 and `https://stepp.utdallas.edu/`)

Part of my research work was modeling, developing and implementing STEPP environment system:

- Worked on the the development of the in-house built physics system using Unity game engine.
- Worked closely with the UX team to improve the functionality and experience of the application and deliver results within the stipulated deadline.
- Media Article: UTD MERCURY NEWSPAPER
- Meanwhile, I was also one of contributors to the project VIGOR.

08/2016 – 12/2016 **Research Assistant**, *Institute for Data Analytics.*
E-PLAN: Emergency Response Information System for first responders in United States.

Part of my research work was upgrading E-PLAN Real-Time Chemical Plume Mapping & Geographic Information Reporting System with new versions Google Maps API and weather retriever API.

08/2015 – 12/2017 **Research Assistant**, *Multimedia Systems Lab.*
(For references see papers BigMM'17, ISM'17, IWISC'18, and Demos URLs below)

Part of my research was proposing and developing a Multimodal Collaborative Virtual Laboratory (MMCVL) system that is extended from Multi-modal 3D tele-immersion project. I conducted projects about STEM-domain scaffolded 3D immersive virtual learning environment which assists community college students to learn theoretical or experimental concepts (i.e. How to read a meniscus; How to use hydrometer; Learning DNA structure; Learning RNA transcription and translation processes) in virtual collaborative chemistry/biology lab. All of projects are built on Unity game engine and TIGER (Tele-Immersive Gaming Environment and Resources) system from Multimedia Systems Lab, which facilitates virtual collaboration among a distributed set of humans by using 3D cameras such as Microsoft Kinect. Projects may also apply with Oculus rift, MYO armband, and Leap Motion gesture tracking. The data management server is using SQLite and WAMP. The interface between users and VR system is using HTML webpage for logging in.

1. **How to read a meniscus**
   - Two experiments demos: *Experiment 1*, *Experiment 2*

2. **How to use Hydrometer**
   - Kinect + Myo Armband Version: *Video*
   - Oculus Rift + Leap Motion Version: *Video 1* *Video 2*
3. **An interactive VR platform for learning DNA structure**
   - Oculus Rift Version: *Video*
4. **Learning RNA transcription and translation processes**
   - Kinect(Only) Version: *Video*

Internship Experience

01/2021 – 05/2021 **Instructor of Computer Science**, *Emporia State University*, Emporia, KS.
- Taught (online) 6 credit hours in two undergraduate-level courses: Programming and Problem Solving II and Advanced Web-based Applications.
- Actively involved students in relevant research events.
- Participated service in the School, the University and the broader community.

Industry Experience

2011 – 2013 **Software Test Engineer**, *Infosys*, Shanghai, China.
- Designed test planning and formulated test scenarios
- Set up system of manual testing and automation testing solutions from ground up

Curriculum Vitae

Chang-Hyun Jo
Professor, Ph.D.
Department of Computer Science
California State University at Fullerton
Fullerton, CA 92834-6870, USA
657-278-7255
(E-mail) cjo@fullerton.edu
(WWW) http://jo.ecs.fullerton.edu

EDUCATION:

Ph.D. in Computer Science (May 1991), Oklahoma State University, Stillwater, OK, USA.
https://go.okstate.edu/
M.S. in Computer Science (July 1988), Oklahoma State University, Stillwater, OK, USA.
https://go.okstate.edu/
B.Economics in Statistics (Feb. 1984), SungKyunKwan University, Seoul, Korea.
https://www.skku.edu/eng/

CERTIFICATES:

Certified Agile Leadership
Certified Scrum Master
Certified Product Owner
SEI Certified CMMI Instructor
SEI Certificate in CMMI
SEI ATAM Evaluator Certificate
SEI Software Architecture Professional Certificate
IEEE Computer Society Education Board (IEEE-Certified Software Development Professional (CSDP), SWEBOK)

EXPERIENCE:

August 2002 – Present:
Professor (Tenured), Department of Computer Science, California State University at Fullerton, CA, USA

- Department Chair (2021 – Present)
- Master of Science in Software Engineering (MSE) Program Coordinator (2018 – 2021)
- Teaching: Software Engineering, Compilers, Programming Languages, Seminar in Computer Sciences (curriculum development: 8 new courses)
- Research: Numerous funded research and consulting, Publication of 70+ technical papers.
- Service: ACM SAC Programming Languages Track Chair (1998-2010), Graduate Advisor, Vice Chair, ACM Student Advisor, Graduate Committee, Undergraduate Committee, MSE Committee, AMSE Committee, Resource Committee, Executive Committee, College Curriculum Committee.
- Student Advising: More than 120 M.S. students in the areas of software engineering, CMMI, SCAMPI, software design, software architecture, ISO 12207, ISO 15504 (SPICE), agent-oriented software engineering, agent-based programming languages and compilers, Agile Processes, Scrum, XP.

Oct. 1998 – July 2002:
Associate Professor (Tenured), Department of Computer Science, University of North Dakota, Grand Forks, ND, USA

- Teaching: Organization of Programming Languages, Software Engineering, Principles of Translation, Computer Science II (Ada), Compiler Design (Java Bytecode), Advanced Software Engineering (OOA/OOD), Programming Languages and Paradigms (Distributed Computing with Java/CORBA – Programming for Internet/Web Server/Collaborative Tools).
- Student Advising: 7 M.S. Students and Undergraduate Student Projects/Thesis
- Service: Faculty Search Committee Chair, Undergraduate Committee Chair (curriculum, assessment, accreditation), and several committee members.
- Research: Several research grant, Publication of 7 technical papers in conference proceedings between 1998 and 2002.

Sept. 1991 – Aug. 1998:
Associate Professor (Tenured), Computer Science Department, Kyonggi University, Suwon, Kyonggi-Do & Seoul, Korea.

- Teaching: Programming Languages, Compiler Writing, Computer Science, Artificial Intelligence, Programming Methodology and Practices, Multimedia Programming, etc. (Undergraduate/MS/Ph.D. Courses)
- Student Advising: 4 M.S. Graduate Student Research
- Serving many committees and chairs such as the University Information Committee
- Research: Numerous research grants, publications of almost 40 technical papers in journals, conferences and international standards (between 1988 and 1998).

Department Chair (March 1992 - Feb. 1994), Computer Science Department, Kyonggi University, Korea.

- Academic Administration, Fund Managing, Lab Renovation, University IT Renovation Chair

Part-time Research Staff (Invited Joint-Research Position) (Sept. 1992 - July 1993), Electronics and Telecommunications Research Institute (ETRI), Korea.

- Joint Research: Object-Oriented CHILL Design and Compiler Construction, Debugger, Software Testing etc.
- Delegate to International Standardization of ITU-T Z.200 (Sponsored by Korea Telecommunications Tech. Association (TTA), Korea Telecom (KT), ETRI, Samsung)

Aug. 1987 - May 1991:
Graduate Teaching Assistant, Computer Science Department, Oklahoma State University, USA.

- Class Teaching: Compiler Writing, PL/I Programming Language
- Grading: Discrete Mathematics, Operating Systems, Computer Science, Computer Architecture.
- 7 Publications: papers in ACM/IEEE/ISMM conferences, MS thesis, and Ph.D. Dissertation.

Dec. 1983 - April 1985:
Software Engineer, Electronics Research Lab. Hyo-Sung Co., Korea.

- Programming of Chinese/Japanese Dictionary Utility Program, Hitachi COBOL Compiler Maintenance, Writing numerous technical reports and lab standards.

PROFESSIONAL AFFILIATION AND ACTIVITIES:

Member of Scrum Alliance
Member of ACM, IEEE Computer Society
Programming Language Track Chair of ACM Symposium on Applied Computing (ACM SAC) (1998 - 2008)
Editor of ACM Applied Computing Review (1997-2008)
Asia Membership Liaison of ACM SIGAPP (1996-1998)
Secretary of ACM SIGAPP (2005-2007)
ITU-T SG10 Korean Delegate (1992-1998) International Standardization for CHILL
Editor and Vice Chair of Korea Information Processing Society (1996-1998)
Co-organizer of Special Interest Group on Object-Oriented Technology in Korea (1997-1998)

AREA OF INTEREST:

Software Process Improvement, Software Architecture, ATAM, CMMI, SCAMPI, ISO 12207, ISO 15504, agile process, Scrum, XP.
Agent-Based Programming Language and Software Engineering (APL, AMT, etc.)
Object-Oriented S/W Engineering (Modeling, Analysis, Design, Testing, Tools, Formal Specification)
Concurrent Object-Oriented Programming Language Design and Compiler Construction (Parallel-C++, CHILL-96)
Integrated Programming Environments (Debugger, Compiler/Interpreter)
Computer Supported Cooperative Work (CSCW)/Collaborative tools/Groupware on the Internet/Web, Ubiquitous Computing, SaaS (Software as a Service)

PUBLICATIONS:

1. Jo, Chang-Hyun. *Abstraction and Specification of Local Area Networks*. **M.S. Thesis**. (Donald D. Fisher, Advisor), Department of Computing and Information Sciences. Oklahoma State University. (July 1988).
   https://shareok.org/handle/11244/15620

   Jo, Chang-Hyun, Fisher, Donald D. and George, K.M. Abstraction and Specification of Local Area Networks. Proceedings of the Eighth Annual International Phoenix Conference on Computers and Communications, Scottsdale, Arizona, (March 22-24, 1989), IEEE Computer Society Press, (1989), 337-342. https://ieeexplore.ieee.org/document/37411

2. Jo, Chang-Hyun and George, K.M. Distributed object-oriented programming with dynamic objects. OSU-CS-TR-89-14, Department of Computer Science, Oklahoma State University (1989).

3. Jo, Chang-Hyun. Parallel-C++: An object-based parallel programming language. (Abstract/Presentation) Centennial Graduate Student Research Symposium, Oklahoma State University, (Feb. 27, 1990).

4. Jo, Chang-Hyun and George, K.M. Language concepts using dynamic and distributed objects. Proceeding of the ACM 1991 Computer Science Conference (ACM/CSC '91), San Antonio, Texas, (March 5-7, 1991), ACM Press (1991), 211-220.
http://dl.acm.org/citation.cfm?id=327243

5. Jo, Chang-Hyun, George, K.M. and Teague, K.A. Parallelizing translator for an object-oriented parallel programming language. Proceedings of the Tenth Annual International Phoenix Conference on Computers and Communications (IPCCC '91), Scottsdale, Arizona, (March 27-30, 1991), IEEE Computer Society Press (1991), 265-271.
https://ieeexplore.ieee.org/document/113821

6. Jo, Chang-Hyun. *The Design and Implementation of an Object-Oriented Parallel Programming Language*. **Ph.D. Dissertation**, (K. M. George, Advisor), Department of Computer Science, Oklahoma State University (May 1991).
https://shareok.org/handle/11244/20669

7. Jo, Chang-Hyun and George, K.M. Storage management for dynamic objects in a distributed memory system. Proceedings of the Fourth ISMM International Conference on Parallel and Distributed Computing and Systems. Washington, DC, ACTA Press, (ISBN: 0-88986-159-5), (October 8-11, 1991), 112-116.

8. Lee, J. K., ***Jo, Chang-Hyun**, et. al. A Survey of Object-Oriented Programming Concepts. ETRI, Korea, TT/E-TM92-05, (1992).

9. Jo, Chang-Hyun. Investment Consultant Expert System. Proc., Basic Science Research Institute, Kyonggi University, Vol.6, No.1, pp.73-84, (1992).

10. Jo, Chang-Hyun. Natural Language Processing using Prolog. Kyonggi University Journal, No.31, 329-342, (1992).

11. Lee, J.-K., ***Jo, Chang-Hyun**, Lee, D.-G., Choi, W., Song, Y.-K., and Kim, Y.-S., A Survey: Object-Oriented Programming Concepts and Paradigm, Electronics and Telecommunications Trend Analysis, ETRI, Korea, 45-68, (April 1993).

12. Lee, J.-K., ***Jo, Chang-Hyun**, Lee, D.-G., Choi, W., Song, Y.-K., and Kim, Y.-S., A Study of Type Extension for OOCHILL, Korea Information Science Society 1993 Spring Conference, (1993).

13. Lee, J.-K. ***Jo, Chang-Hyun**, Lee, D.-G., Choi, W., Choi, G.-B., and Lee, C.-K. An efficient implementation of type-test and type-guard for an object-oriented switching system. Proc. of the International Conference on Globalization of Computer & Communication (INFOCOM'93), Tata McGraw-Hill, New Delhi, 148-155, (1993).

14. Jo, Chang-Hyun, A Study on Concurrent Object-Oriented Programming, The Statistical Review, V.2, Research Institute of Applied Statistics, 61-76, (May 1994).

15. Jo, Chang-Hyun and Choi, Wan. A Proposal for Concurrent Objects in CHILL. ITU-T SG10 Contribution, 10/D/0025, Geneva, Swiss, (1994. 10.).

16. Jo, Chang-Hyun and Lee, Sang-Hong. Analysis for the Syntactic Problems in Object-Oriented CHILL. ITU-T SG10 Contribution, 10/TD/0055, Geneva, Swiss, (1994. 10.).

17. Kim S., ***Jo, Chang-Hyun**. An Implementation Scheme for a Concurrent Object-Oriented Language on a Parallel System, Korea Information Science Society Conference (Fall), 117-120, (1994).

18. Kim, S., ***Jo, Chang-Hyun**. A Design and Implementation of Concurrent Object-Based C Preprocessor, Korea Information Processing Society Conference (Fall), 75-78, (1994).

19. Baek, I., ***Jo, Chang-Hyun**. An Implementation Scheme for Concurrent Object-Oriented CHILL on SPARC, Korea Information Science Society Conference (Fall), 113-116, (1994).

20. Jo, Chang-Hyun. Guarded Methods in Object-Oriented CHILL. 1995 CHILL Expert Meeting Contribution, WD.004, SIEMENS, Taipei, (1995. 3.).

21. Jo, Chang-Hyun et al. Design of a Concurrent Object-Oriented Programming Language for Telecommunications, Korea Information Science Society Conference (Spring), 337-340, (1995. 4.).

22. Jo, Chang-Hyun, Guarded Methods for Concurrent Objects. Korea Information Processing Society Conference (Spring), 459-462, (1995. 5.)

23. Jo, Chang-Hyun, et al. Encoding for Debugging Information of Object-Oriented Programs, Korea Information Science Society Conference (Choong-Chung Regional), 253-256, (1995. 11.24 - 25).

24. Jo, Chang-Hyun. An Experiment on a Concurrent Object-Oriented Programming Language. Proc. of the ACM Symposium on Applied Computing (SAC'96), Philadelphia, USA, 98-104, (1996. 2. 18-20). https://dl.acm.org/doi/abs/10.1145/331119.331157

25. Kim, P., Lee, C., Lee, J., ***Jo, Chang-Hyun**. A Development of a SPARC Back-End, Korea Information Processing Society Conference (Spring), 138-141, (1996. 4. 12-13).

26. Im, H. , Kim, P., ***Jo, Chang-Hyun**, et al. A Design of an Object-Oriented CHILL Debugger, Korea Information Processing Society Conference (Spring), 142-145, (1996. 4. 12-13).

27. Lee, C., Kim, J., ***Jo, Chang-Hyun**. Design and Prototyping of a C++ Compiler Front-End, Korea Information Science Society Conference (Fall), 819-822, (1996. 10. 25-26).

28. Kim, P., Im, H., ***Jo, Chang-Hyun**, et. al. A Model Test of Object-Oriented CHILL Debugger, Korea Information Science Society Conference (Fall), 827-830, (1996. 10. 25-26).

29. Jo, Chang-Hyun, et al. A Design and Prototyping of an Object-Oriented Program Debugger, Proc. of the ACM Symposium on Applied Computing (SAC'97), San Jose, USA, 45-51, (Feb.28, 1997). https://dl.acm.org/doi/10.1145/331697.331708

30. Im, H., ***Jo, Chang-Hyun**, et al. A Debugging Scheme for Object-Oriented Program with Visibility, Korea Information Processing Society Conference (Spring), 866-869, (1997. 4. 12.).

31. Lee, C., Son, J, and ***Jo, Chang-Hyun**. An Implementation of a Concurrent Object-Oriented Language: Parallel-C++, Korea Information Science Society Conference (Fall), 277-280, (1997. 10).

32. Jo, Chang-Hyun and Kang, S. An Experiment on Semantic Prototyping, Korea Information Science Society Conference (Fall), 331-334, (1997. 10.).

33. Jo, Chang-Hyun. A Proposal for an Overloading Mechanism in Object-Oriented CHILL, Journal of Basic Science, 10(2), 393-401, Kyonggi University, (1997. 12.).

34. Jo, Chang-Hyun, A Formal Definition of Module Mode in CHILL, Journal of Basic Science, 19(2), 403-410, Kyonggi University, (1997. 12.).

35. Jo, Chang-Hyun. A Dynamic Binding and a Dynamic Type Checking for Polymorphism, Journal of Kyonggi University, 41(2), 289-304, (1997. 12.).

36. Jo, Chang-Hyun. A Design of Generic Constructs on an Object-Oriented Programming Language, Journal of Kyonggi University, 41(2), 305-319, (1997. 12.).

37. Jo, Chang-Hyun, et al. A Realization of Concurrent Object-Oriented Programming, Proc. of the ACM Symposium on Applied Computing (SAC'98), Atlanta, Georgia, USA, 558-563, (Feb. 27 – Mar 1, 1998). https://dl.acm.org/doi/10.1145/330560.330928

38. Jo, Chang-Hyun et al. Implementation of a Code Generator for SPARC, Journal of Korea Information Science Society, 4(1), 178-189, (Feb. 1998).

39. Jo, Chang-Hyun, Jea Gi Son, Younwoo Kang, and Phill Soo Lim, "The Distributed Programming Environment on the Internet", ACM 1999 13th Annual Symposium on Applied Computing (ACM SAC'99), San Antonio, Texas, 85-90, (Feb. 28 – March 2, 1999). https://dl.acm.org/doi/10.1145/298151.298206

40. Denehy, Timothy E. and **Jo, Chang-Hyun**. "Parallel-C++ for the Java Virtual Machine", ND-EPSCoR Poster Session, North Dakota State University, July 28, 1999.

41. Arnold, Allen J. and **Jo, Chang-Hyun**, "Distributed Programming Environment to Facilitate Geographically Separate Collaboration and Education", ND-SD Joint EPSCoR Conference Poster Session, September 10, 1999.

42. Denehy, Timothy E. and **Jo, Chang-Hyun**. "Parallel-C++ for the Java Virtual Machine", ACM 2000 14th Annual Symposium on Applied Computing (ACM SAC'00), 843-848, Como, Italy, (March 2000). https://dl.acm.org/doi/10.1145/338407.338576

43. Jo, Chang-Hyun, Introduction to the Programming Languages Track, ACM Annual Symposium on Applied Computing (SAC), 722-724, Villa Olmo, Como, Italy, 2000. http://www.sigapp.org/sac/

44. Jo, Chang-Hyun. A Seamless Approach to the Agent Development, ACM 2001 15th Annual Symposium on Applied Computing (ACM SAC'01), Las Vegas, 641-647, (March 2001). https://dl.acm.org/doi/10.1145/372202.372791

45. Jo, Chang-Hyun, Introduction to the Programming Languages Track, ACM Annual Symposium on Applied Computing (SAC), 2001.

46. Jo, Chang-Hyun and Allen J. Arnold, "Agent-based Programming Language: APL", ACM 2002 16th Annual Symposium on Applied Computing (ACM SAC'02), Madrid, Spain, 27-31, (March 2002). https://dl.acm.org/doi/10.1145/508791.508799

47. Jo, Chang-Hyun and Rajeev R. Raje, "Editorial Message: Special Track on Programming Languages and Object Technologies", Proceedings of ACM Symposium on Applied Computing (SAC), 925-926, Universidad Carlos III De Madrid, Spain, March 11-14, 2002. https://dl.acm.org/doi/10.1145/3253211

48. Feng, Xin and **Jo, Chang-Hyun**, "Agent-Based Stock Trader", The 18th International Conference on Computers and Their Applications, The International Society for Computers and Their Applications, (ISCA CATA-2003), 275-278, Honolulu, Hawaii, March 26-28, 2003. (ISBN 1-880843-46-3) https://dblp1.uni-trier.de/db/conf/cata/cata2003.html

49. Lin, Dongqing, Wiggen, Thomas P. and **Jo, Chang-Hyun**, "A Restaurant Finder using Belief-Desire-Intention Agent Model and Java Technology", The 18th International Conference on Computers and Their Applications, The International Society for Computers and Their Applications, (ISCA CATA-2003), 404-407, Honolulu, Hawaii, March 26-28, 2003. (ISBN 1-880843-46-3) https://dblp1.uni-trier.de/db/conf/cata/cata2003.html

50. Zhao, Wei and **Jo, Chang-Hyun**. "A Compiler Design for the Agent-Based Programming Language", The 18th International Conference on Computers and Their Applications, The International Society for Computers and Their Applications, (ISCA CATA-2003), 393-396, Honolulu, Hawaii, March 26-28, 2003. (ISBN 1-880843-46-3) https://dblp.uni-trier.de/db/conf/cata/cata2003.html

51. Jo, Chang-Hyun and Rajeev R. Raje, "Editorial Message: Special Track on Programming Languages and Object Technologies", Proceedings of ACM Symposium on Applied Computing (SAC), 1046-1047, Melbourne, Florida, March 9-12, 2003. https://dl.acm.org/doi/abs/10.1145/967900.968191

52. Jo, Chang-Hyun. "A New Way of Discovery of Belief, Desire and Intention in the BDI Agent-Based Software Modeling", The International Conference and Exhibition on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management (HNICEM 2003), Manila, Pavillon Hotel, March 27-30, 2003. (ISBN# 971-92723-0-9)

53. Jo, Chang-Hyun and Allen J. Arnold, "A Portable and Collaborative Distributed Programming Environment", The 2003 International Multi-Conference in Computer Science and Computer Engineering – The International Conference on Software Engineering, (IMCCSCE – SERP'03), 198-203, Las Vegas, Nevada, June 23-26, 2003.
https://dblp.org/db/conf/serp/serp2003-1.html#JoA03

54. Jo, Chang-Hyun and Einhorn, Jeffery M., "A Process for BDI Agent-Based Software Construction", The 2003 International Multi-Conference in Computer Science and Computer Engineering – The International Conference on Software Engineering, (IMCCSCE – SERP'03), 204-209, Las Vegas, Nevada, June 23-26, 2003.
https://dblp.org/db/conf/serp/serp2003-1.html#JoA03

55. Einhorn, Jeffery M. and **Jo, Chang-Hyun**. "A Use-Case Based BDI Agent Software Development Process", Proceedings of the 2nd International Workshop on Agent-Oriented Methodologies, 7-20, ACM *OOPSLA-2003*, Anaheim, October 26-30, 2003.
https://www.semanticscholar.org/paper/A-Use-Case-Based-BDI-Agent-Software-Development-Einhorn-Jo/1f33d48e3f68622de2aae53317ee6ef3d1b2e79a?p2df

56. Jo, Chang-Hyun, Zhao, Wei and Cong, Bin., "A Design and Implementation of the Belief-Desire-Intention Agent-based Programming Language", ***Information: An International Interdisciplinary Journal***, ISSN 1343-4500 (print), 1344-8994 (electronic), 7(1), International Information Institute, (January 2004), 137-153.
http://www.information-iii.org/information_journal.html

57. Jo, Chang-Hyun. "A New Way of Discovery of Belief, Desire and Intention in the BDI Agent-Based Software Modeling", ***the International Journal of Advanced Computational Intelligence & Intelligent Informatics (JACIII)***, ISSN 1343-0130, 8(1), 2-6, Jan. 2004.
https://www.fujipress.jp/jaciii/jc/jacii000800010002/
(the most downloaded paper in January 2015, Oct. 2014, September 2014, …)

58. Jo, Chang-Hyun, Guobin Chen and James Choi, "A New Approach to the BDI Agent-Based Modeling", ACM SAC 2004, 1541-1545, Nicosia, Cyprus, March 14-17, 2004.
https://dl.acm.org/doi/abs/10.1145/967900.968208

59. Chang-Hyun Jo, Marjan Mernik, and Barrett R. Bryant, Editorial Message: Special Track on the Programming Languages, ACM Symposium on Applied Computing (SAC), 1453-1454, Nicosia, Cyprus, March 14-17, 2004.
https://dl.acm.org/doi/10.1145/3259498

60. Jo, Chang-Hyun, Guobin Chen and James Choi, "A Framework for BDI Agent-Based Software Engineering", *Studia Informatica Universalis (International Journal)*, Vol.3, No.3, Editions SUGER, 15 rue Catulienne, F-93200 Saint-Denis, France; 41 rue G. Lussac, 75005 Paris, France, (ISBN 2-912590-30-2), (ISSN 1621-7545), 285-314, 2004.
https://dblp.org/db/journals/siu/siu3.html

61. Jo, Chang-Hyun, Won-Young Kim, Jeong-Min Shim, and Wan Choi. Agent-based Framework for Software On-Demand. Proceedings of the IEEE 7th International Conference on Advanced Communication Technology (ICACT), Phoenix Park, Korea, (Vol.2), 730-735, Feb. 21-23., 2005. (IEEE Catalog # 05EX1046) (ISBN: 89-5519-123-5)
https://ieeexplore.ieee.org/document/1462879

62. Chang-Hyun Jo, Marjan Mernik, and Barrett R. Bryant, Editorial: Programming Languages Track, ACM Symposium on Applied Computing (SAC), 1383-1384, 2005.
https://dl.acm.org/doi/10.1145/3244421

63. Park, Seungjin, Seong-Moo Yoo, M. Al-Shurman, B. V. Voost, **Chang-Hyun Jo**, "ARM: Anticipated Route Maintenance Scheme in Location-Aided Mobile Ad Hoc Networks", *Journal of Communications and Networks*, Vol.7, No.3, 325-336, September 2005.

64. Jeong-Min Shim, Won-Young Kim, Wan Choi and **Chang-Hyun Jo**. Agent-Based Framework for the Software On-Demand Service. Information: An International Journal, International Information Institute, A Special Issue for the Software Engineering and Software Security, Tokyo, Japan, Vol.8, No.5, 725-738, September, 2005, (ISSN 1343-4500)
http://www.information-iii.org/abs_e2.html#No5-2005

65. Jo, Chang-Hyun and Einhorn, Jeffery M., "A BDI Agent-Based Software Process", *Journal of Object Technology (JOT)*, Vol.4, No.9, 101-121, November – December 2005.
http://www.jot.fm/issues/issue_2005_11/article3
http://www.jot.fm/contents/issue_2005_11/article3.html
http://www.jot.fm/issues/issue_2005_11

66. Chang-Hyun Jo, Marjan Mernik, and Barrett R. Bryant, Editorial Message: Programming Languages Track, ACM Symposium on Applied Computing (SAC), 1601-1602, Dijon, France, April 23-27, 2006.
https://dl.acm.org/doi/10.1145/3245489

67. Chang-Hyun Jo, Marjan Mernik, and Barrett R. Bryant, Editorial Message: Programming Languages Track, ACM Symposium on Applied Computing (SAC), Seoul, Korea, March 11-15, 2007.
https://dl.acm.org/doi/10.1145/3246516

68. Chang-Hyun Jo, Marjan Mernik, and Barrett R. Bryant, Special Track on Programming Languages: Editorial Message, ACM Symposium on Applied Computing (SAC), 189-190, Fortaleza, Ceara, Brazil, March 16-20, 2008.
https://dl.acm.org/doi/10.1145/3260534

69. Marjan Mernik, Barrett R. Bryant, and **Chang-Hyun Jo**, Editorial, Special issue on the Programming Languages Track at the 23rd ACM Symposium on Applied Computing, Science of Computing Programming (SCP), Elsevier, 75, 919-290, 2010.
https://www.journals.elsevier.com/science-of-computer-programming/special-issues

70. Jo, Chang-Hyun, Software Architecture: 5W-1H, Software and System Process Improvement Network (SPIN) Meeting, Northrop Grumman, E2 Presentation Center (formally TRW), Redondo Beach, CA, 9am-12noon, Feb.12, 2010.

References
Researchers in Agent-Based Models, http://www.agent-based-models.com/blog/researchers/j/

Citations (more than 110 times for 34 publications)
(Microsoft Academic)
https://academic.microsoft.com/author/2557836369/publication/search?q=Chang-Hyun%20Jo&qe=Composite(AA.AuId%253D2557836369)&f=&orderBy=0

Gary Palosaari, The Boeing Company, How to Establish a Process Architecture and Use it for Process Improvement, CMMI Technology Conference & User Group, Nov. 15-18, 2010.

Research Grants (1991-Present: $273,588)

Research Grants (2002 to Present)

Research Title	Funding	Amount	Period
A Research on the Framework and Programming Environment for On-Demand Software, Electronic and Telecommunications Research Institute (ETRI), Korea, $25,000, May 1, 2004 - November 30, 2004.			
A Research on the Programming Environment for the Evergreen Technique and Software on Demand, ETRI, Korea, $26,000, June 2005 – November 2005. (Renewed project)			
A Research on the Programming Environment for the Evergreen Technique and Software on Demand, ETRI, Korea, $30,000, July 2006 – November 2006. (Renewed project)			

Research Grants (1999 to 2001)

Research Title	Funding	Amount	Period
Development of the Distributed Programming Environment	UND ORPC(FRCAC)	US$ 1,700	1999.1-'99.12
"	ND EPSCoR TRIC	US$ 3,500	1999.5-'99.11
Development of the New Course Material	UND SIDP	US$ 2,700	2000.7-'00.8
Component-Based Framework (1st yr)	ND EPSCoR IIP (1st)	US$ 7,500	2000.5-'01.4
Component-Based Framework (2nd yr)	ND EPSCoR IIP (2nd)	US$ 7,500	2001.5-'02.4

- UND ORPD: University of North Dakota, Office of Research & Program Development, Faculty Research and Creative Activity Committee
- ND : North Dakota
- EPSCoR: Experimental Program to Stimulate Competitive Research
- TRIC: Technology Transfer Into Commercialization
- UND SIDP: University of North Dakota, Summer Instructional Development Professorship
- IIP: Seed Grant

Small Awards (1999 to 2001)

Research Title	Funding	Amount	Period
Travel to the ACM SAC'99, San Antonio	ND EPSCoR	US$ 250	1999.1.- '99.5.
Travel to the ACM SAC'99, San Antonio	UND ORPD	US$ 428	1999.2.- '99.3.
Travel to the NASA	ND EPSCoR	US$ 1,000	1999.8.
Travel to the Oak Ridge National Lab.	ND EPSCoR	US$ 500	1999.8.17.
Travel to the OOPSLA'99, Denver	UND FIDC	US$ 660	1999.10.
OOPSLA'00 Educational Symposium Scholarship	ACM SIGPLAN	US$ 1,950	2000.10.15-19.

- UND: University of North Dakota, Office of Research and Program Development, Faculty Research and Creative Activity Committee
- ND : North Dakota
- EPSCoR: Experimental Program to Stimulate Competitive Research

Research Grants (1991-1998)

Research Title	Funding	Amount	Period
The Next Gen. CHILL Compiler	ETRI, Korea	US$17,000	1993.7-'94.6
ATM CHILL Compiler	ETRI, Korea	US$ 6,700	1994.7-'95.6
CHILL/SPARC Back-End	SamSung Electronics	US$28,000	1995.1-'95.12
Object-Oriented CHILL Debugger Research	ETRI, Korea	US$17,000	1995.3-'95.12
Object-Oriented CHILL Manual	ETRI, Korea	US$25,000	1995.9-'96.4
Compiler Front-End	Kyonggi Univ.	US$ 2,800	1995.11-96.10
Object-Oriented CHILL Debugger Develop.	ETRI, Korea	US$22,500	1996.3-'96.12
Semantic Prototyping	Kyonggi, Univ.	US$ 3,400	1997.1-'97.6
OO S/W Testing Language	ETRI, Korea	US$22,500	1997.1-'97.12
Audit Guidelines for IS Develop. Using OO Approach	N. Comp. Agency	US$20,000	1998.8-'98.10

- ETRI, Korea: Electronics and Telecommunications Research Institute
- N. Comp. Agency: Korea National Computerization Agency

SHILPA LAKHANPAL

shlakhanpal@fullerton.edu
657-278-7305

WORK EXPERIENCE

California State University Fullerton — **Fullerton, CA**
Assistant Professor, Computer Science (Tenure track) — **Aug 2019 - Present**
CPSC 131: Data Structures
CPSC 351: Operating System Concepts
CPSC 483: Introduction to Machine Learning

Western Michigan University — 2007-10, 2012-17
Graduate Teaching Assistant / Doctoral Associate
Software Engineering I & II, Design of User Interfaces, Analysis of Algorithms, Advanced Operating Systems, Advanced Computer Architecture, Foundations of Computer Science, Programming with Java, Matlab, Fluency with Information Technology

EDUCATION

Western Michigan University — **Kalamazoo, MI**
PhD, Computer Science — **June 2019**
MS, Computer Science — Dec 2009

University of Delhi — Delhi, India
MCA (Master of Computer Applications)
BSc, Computer Science

PUBLICATIONS

- Lakhanpal, S., Gupta, A., & Agrawal, R. (2017). Mining domain similarity to enhance digital indexing. In *Proceedings of the 2017 9th International Conference on Management of Digital EcoSystems, MEDES 2017*. ACM. DOI: 10.1145/3167020.3167033
- Lakhanpal, S., Gupta, A., & Agrawal, R. (2015). Discover trending domains using fusion of supervised machine learning with natural language processing. In *2015 18th International Conference on Information Fusion, Fusion 2015*. (pp. 893-900). [7266654] IEEE
- Lakhanpal, S., Gupta, A., & Agrawal, R. (2015). Towards extracting domains from research publications. In *Modern Artificial Intelligence and Cognitive Science Conference (MAICS) 2015, CEUR Workshop Proceedings*. (Vol. 1353, pp. 117-120). CEUR-WS
- Lakhanpal, S., Gupta, A., & Agrawal, R. (2014). On discovering most frequent research trends in a scientific discipline using a text mining technique. In *Proceedings of the 2014 ACM Southeast Regional Conference, ACM SE 2014*. [2638528] ACM. DOI: 10.1145/2638404.2638528

RESEARCH INTERESTS

Data Science: All aspects of Data Mining and Analytics encompassing Machine Learning Techniques

SELECTED GRANTS AND HONORS

Western Michigan University

Doctoral Associateship	2016-17
Graduate Research and Creative Scholar	2016
Travel Grant	2015
Graduate Teaching Assistantship	2007-10, 2012-16

Others
Monroe Brown Scholarship 2009

SKILLS

- Python and R modules for data mining, machine learning, NLP, artificial intelligence
- Python, R, Java, C++, C, C#, SQL, Matlab
- Eclipse, Anaconda, Netbeans, Visual Studio

OTHER WORK EXPERIENCE

Department of Computer Science, Western Michigan University Kalamazoo, MI
Organizer and Instructor Summer Camp 2014
- Taught a video game programming course to middle and high school students

Mechanical and Aerospace Engineering, Western Michigan University Kalamazoo, MI
Programmer Summer 2013
- Helped design 3D environments for students around the world to gain access to virtual laboratories

Wolverine Pipe Line Company Portage, MI
Intern Summer 2009
- Successfully developed some components of Wolverine's Intranet
- Used the ASP.NET technology, SQL server, programming with VB.net and JavaScript

Anand V. Panangadan

California State University, Fullerton
800 N. State College Blvd
Fullerton, CA 92831
Ph: 657-278-3998 • Fax: 657-278-7168
apanangadan@fullerton.edu
http://ecs.fullerton.edu/~anandvp

EDUCATION

Ph.D., Computer Science — 2002
University of California, Los Angeles (UCLA)
Advisor: Michael G. Dyer

M.S., Computer Science — 1999
University of California, Los Angeles (UCLA)

B.Tech., Computer Science and Engineering — 1996
Indian Institute of Technology, Bombay

EMPLOYMENT

Associate Professor — 2021- present
Assistant Professor — 2015-2021
Department of Computer Science
California State University, Fullerton

Senior Research Associate — 2013- 2015
Ming Hsieh Department of Electrical Engineering
University of Southern California (USC)

Post-doctoral Affiliate — 2008- 2012
NASA Jet Propulsion Laboratory (JPL)
California Institute of Technology

Research Specialist VI — 2004- 2012
Saban Research Institute
Children's Hospital Los Angeles (CHLA)

Post-doctoral Research Scholar — 2003-2004
Computer Science Department
University of Southern California (USC)
Supervisors: Maja Mataric and Gaurav Sukhatme

Post-doctoral Research Scholar — 2002-2003
Computer Science Department
University of California, Los Angeles (UCLA)
Supervisor: Adnan Darwiche

TEACHING

Instructor
Department of Computer Science, California State University, Fullerton

- *CPSC 481: Artificial Intelligence* — Fall 2020-Fall2021
- *CPSC 375: Introduction to Data Science and Big Data* — Fall 2018-Fall 2021
- *CPSC 131: Data Structures* — Spring 2016-Fall 2019
- *CPSC 583: Expert Systems Design and Theory* — Fall 2015-Fall 2016, Fall 2019, Fall 2021
- *CPSC 313: The Computer Impact* — Fall 2015
- *CPSC 301: Programming Lab Practicum* — Fall 2015

Teaching Assistant/Associate/Fellow
Computer Science Department, UCLA

- *Logic Design of Digital Systems* — 1997-2001
- *Computer Systems Architecture* — 1997, 2000
- *Digital Design Project Lab* — 2000

Instructor
Center for Talented Youth (CTY), Johns Hopkins University

- *Theoretical Foundations of Computer Science* — 1997

TEACHING GRANTS

Course Redesign with Technology — 2017-2018
Sponsor: CSU Office of the Chancellor; Amount: $10,000

TEACHING CERTIFICATES

Equitable Pedagogy Module — 2022
CSU Fullerton Faculty Development Center

Teaching Remotely: Intermediate Level (Titanium) — 2020
CSU Fullerton Faculty Development Center

IMPACT (Intentional and Meaningful Pedagogy to Achieve Classroom Transformations) Teaching Certificate — 2018
CSU Fullerton Faculty Development Center

Big Data Research — 2018
CSU Fullerton Faculty Development Center

Collaborative Learning through Classroom Discussion — 2018
CSU Fullerton Faculty Development Center

Brain Breaks and Other Tips and Tricks for Long Class Sessions — 2017
CSU Fullerton Faculty Development Center

Key Principles of Effective Feedback — 2016
CSU Fullerton Faculty Development Center

Integrating Service Learning 2015
CSU Fullerton Faculty Development Center

Faculty-Led, Short-Term Study Abroad Programs 2015
CSU Fullerton Faculty Development Center

Teaching Awards

Faculty Recognition in Teaching award 2019
CSU Fullerton Faculty Development Center

Best Teaching Assistant Award 2001-2002
(both student and faculty-nominated categories)
Computer Science Department, UCLA

Awards to Students Advised

Outstanding Student Scholarly and Creative Activities Award 2019
Student: Mohammadreza Heydary
Undergraduate student, College of ECS Category
California State University, Fullerton

Best in College/Computer Science award 2016
Student: Gabriel Giancristofaro
2016 ECS Student Projects Showcase & Awards
California State University, Fullerton

First place 2016
Student: Shawn Ricardo (co-advised with Dr. Bein)
30th Annual California State University Research Competition

Scholarly and Creative Activities

Research Grants

SCC-IRG Track 2: Designing and testing remote services to support formerly homeless persons in permanent housing 2021-24
PI: **A. Panangadan**; Co-PIs: K. George, T. Nobari, B. Henwood

Sponsor: NSF; Amount: $1,215,370

Integration of remote mental health services in permanent supportive housing 2019-20
PI: **A. Panangadan**; Co-PIs: K. George, Y. Okado, Z. Salim

Sponsor: Research, Scholarship and Creative Activity (RSCA) Grant, CSU Fullerton; Amount: $14,837

Learning to Analyze Emerging Datasets for Agriculture: Understanding Food Waste Behavior from Social Media 2019-21
PI: **A. Panangadan**

Sponsor: National Institute of Food and Agriculture, US Department of Agriculture; Amount: $179,178

Developing a Foundational Curriculum for the Internet-of-Things: Workforce Development and Education for Orange County 2017-20

PI: **A. Panangadan** and K. George
Sponsor: Cisco Fund; Amount: $296,253

GE Digital-CSU Challenge 2016-19
PI: **A. Panangadan** and S. Barua
Sponsor: GE Digital; Amount: $450,000

Analyzing communication patterns on online social media networks for traffic surge prediction modeling during emergency evacuation 2015-16
PI: **A. Panangadan** and S. Parr
Sponsor: Research, Scholarship and Creative Activity (RSCA) Incentive Grant, CSU Fullerton; Amount: $10,000

Peer-to-peer shared ride services for healthcare delivery 2016
Advisor: A. Panangadan
Sponsor: University of California Center on Economic Competitiveness in Transportation (UCCONNECT) Summer Research program [student research]

Analyzing Social Media Communications for predicting variation in Vehicle Miles Traveled 2016
Advisor: A. Panangadan
Sponsor: University of California Center on Economic Competitiveness in Transportation (UCCONNECT) Summer Research program [student research]

Analyzing spread of influence in social networks for transportation applications 2015-16
PIs: L. Abellera, **A. Panangadan**
Sponsor: University of California Center on Economic Competitiveness in Transportation (US Department of Transportation and Caltrans); Amount: $69,959

Energy-efficient signal processing on 3D memory-integrated multicore platforms 2015
PI: **A. Panangadan** and V. Prasanna
Sponsor: Air Force Research Laboratory

OCICATS (Online community input classification to advance transportation services) – a GIS-based decision-support tool 2014-2015
PIs: L. Abellera, **A. Panangadan**
Sponsor: University of California Center on Economic Competitiveness in Transportation (US Department of Transportation and Caltrans); Amount: $53,774

IEEE IPDPS Conference Student Participation Support 2015
PI: **A. Panangadan**, V. Prasanna
Sponsor: NSF; Amount: $20,000

DEFT: Distributed embedded fault-tolerant control of resource constrained sensor networks 2008
PI: **A. Panangadan**, C. Raghavendra, A. Talukder
Sponsor: NSF; Amount: $100,000

Peer-Reviewed Journal Publications

- M. H. Heydary and **A. Panangadan**, Optimization framework and clustering-based algorithm for energy-aware adaptive sensing, *Engineering Applications of Artificial Intelligence*, 95 October 2020, 103841 (4), pp. 103841, 2020.
- A.J. McEligot, V. Poynor, R. Sharma, and **A. Panangadan**, Logistic LASSO Regression for Dietary Intakes and Breast Cancer. *Nutrients* 2020, 12, 2652.
- O. Patri, **A. Panangadan**, V. S. Sorathia, and Viktor K. Prasanna, Sensors to Events: Semantic Modeling and Recognition of Events from Data Streams, *International Journal of Semantic Computing*, 10(4), pp. 461-501, 2016.
- **A. Panangadan**, S. Liu, A. Talukder and C. S. Raghavendra, Coordinated Sensing of Networked Body Sensors using Markov Decision Processes, *Applied Artificial Intelligence,* 27(2), pp. 126-150, 2013.
- A. Talukder and **A. Panangadan**, Extreme event detection and assimilation from multimedia sources, *Multimedia Tools and Applications,* May 2012.
- A. Talukder, **A. Panangadan**, N. Georgas, T. Herrington, and A. F. Blumberg, Integrated operational control of unattended distributed coastal sensor web systems with mobile autonomous robots. *Selected Topics in Applied Earth Observations and Remote Sensing, IEEE Journal of*, 3(4), pp. 442-450, 2010.
- **A. Panangadan**, M. Mataric and G. Sukhatme, Tracking and modeling of human activity using laser rangefinders. *International Journal of Social Robotics*, 2(1), pp. 95-107, 2010.
- **A. Panangadan** and M.G. Dyer, Construction in a simulated environment using temporal goal sequencing and reinforcement learning, *Adaptive Behavior*, 17(1), pages 81-104, 2009.

Peer-Reviewed Conference Publications

- F.X. Liri, H. Lin, K.J. Lee, B. Fonseca, N. Ruppert, K. George, and **A. Panangadan**. "Real-Time Dynamic Object Recognition and Grasp Detection for Robotic Arm Using Streaming Video: A Design for Visually Impaired Persons", *IEEE 12th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)*, 2021.
- R. Natharani, F.X. Liri, J. Samawi, H. Lin, N. Ruppert, K.J. Lee, K. George, and **A. Panangadan**. "Voice Controlled Object Grasping Robotic Arm for Visually Impaired Disabled Veterans," *2021 IEEE International Conference on Electronics, Computing and Communication Technologies (CONECCT)*, pp. 1-6. IEEE, 2021.
- R. Bagwe, R. Natharani, K. George, and **A. Panangadan**, "Natural Language Controlled Real-Time Object Recognition Framework for Household Robot." In

2021 IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC), pp. 1215-1220. IEEE, 2021.

- E. Lee, B. Chenze, and **A. Panangadan**. "Encouraging Sustainability Practices through Entity Recognition of Food Items on Social Media." In *2021 IEEE 22nd International Conference on Information Reuse and Integration for Data Science (IRI)*, pp. 263-266. IEEE, 2021.
- M. Diaz and **A. Panangadan**, Natural Language-based Integration of Online Review Datasets for Identification of Sex Trafficking Businesses, *IEEE 21st International Conference on Information Reuse and Integration for Data Science (IRI)*, 2020.
- M. H. Heydary, P. Pimpale, and **A. Panangadan**, Automatic identification of use of public transportation from mobile sensor Data, *IEEE Green Technologies Conference (GreenTech)*, Austin, Texas, 2018.
- P. Pimpale, **A. Panangadan**, and L. Abellera, Analyzing spread of influence in social networks for transportation applications, *2018 IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC)*, Las Vegas, USA, 2018.
- G. Kulkarni, L. Abellera, and **A. Panangadan**, Unsupervised classification of online community input to advance transportation services, *2018 IEEE 8th Annual Computing and Communication Workshop and Conference (CCWC)*, Las Vegas, USA, 2018.
- N. Bichu and **A. Panangadan**, Analyzing social media communications for correlation with freeway vehicular traffic, *IEEE First International Conference on Smart City Innovations (SCI 2017)*, Fremont, California, 2017.
- S. Ricardo, D. Bein, and **A. Panangadan**, Low-cost real-time obstacle avoidance for mobile robots, *IEEE 7th Annual Computing and Communication Workshop and Conference (CCWC)*. Las Vegas, USA, 2017.
- G. Giancristofaro and **A. Panangadan**, Predicting Sentiment toward Transportation in Social Media Using Visual and Textual Features, *19th IEEE Intelligent Transportation Systems Conference.* Rio de Janeiro, Brazil, 2016.
- L. Hao, **A. Panangadan** and L. Abellera, Understanding Public Sentiment toward I-710 Corridor Project from Social Media Based on Natural Language Processing, *19th IEEE Intelligent Transportation Systems Conference.* Rio de Janeiro, Brazil, 2016.
- V. Zois, **A. Panangadan** and V. K. Prasanna, Accelerating Support Count for Association Rule Mining on GPUs, *ParLearning - Parallel & Distributed Processing Symposium Workshops (IPDPSW), 2016 IEEE International. IEEE,* Chicago, USA, 2016.
- G. Harris, **A. Panangadan** and V. K. Prasanna, PRIMER - A Regression-Rule Learning System for Intervention Optimization, *10th International Web Rule Symposium (RuleML), 2016*, Stony Brook University, USA, 2016.
- O. Patri, R. Kannan, **A. Panangadan** and V. K. Prasanna, Multivariate Time Series Classification Using Inter-leaved Shapelets, NIPS Time Series Workshop, Neural Information Processing Systems (NIPS 2015), Montreal, Canada, 2015.
- Y. Zhang, **A. Panangadan** and V. K. Prasanna, UFOMQ: An Algorithm for Querying for Similar Individuals in Heterogeneous Ontologies, *The 17th International Conference on Big Data Analytics and Knowledge Discovery (DaWak)*, Valencia, Spain, 2015.

- C. Shang, **A. Panangadan** and V. K. Prasanna, Event Extraction from Unstructured Text Data, *26th International Conference on Database and Expert Systems Applications (DEXA)*, Valencia, Spain, 2015.
- Y. Zhang, **A. Panangadan** and V. K. Prasanna, Integration of Heterogeneous Web Services for Event-based Social Networks, *The 16th IEEE International Conference on Information Reuse and Integration (IEEE IRI)*, San Francisco, California, 2015.
- C. M. Cheung, Y. Zhang, **A. Panangadan** and V. K. Prasanna, Computational Cost of Querying for Related Entities in Different Ontologies, *The 16th IEEE International Conference on Information Reuse and Integration (IEEE IRI)*, San Francisco, California, 2015.
- S. Singapura, **A. Panangadan** and V. K. Prasanna, Performance Modeling of Matrix Multiplication on 3D Memory Integrated FPGA, *22nd Reconfigurable Architectures Workshop (RAW)*, *29th Annual International Parallel & Distributed Processing Symposium (IPDPS)*, Hyderabad, India, 2015.
- S. Singapura, **A. Panangadan** and V. K. Prasanna, Towards Performance Modeling of 3D Memory Integrated FPGA Architectures, *11th International Symposium on Applied Reconfigurable Computing (ARC)*, Bochum, Germany, 2015.
- G. Harris, **A. Panangadan** and V. K. Prasanna, Learning of Performance Measures from Crowd-sourced Data with Application to Ranking of Investments, *The 19th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, Ho Chi Minh City, Vietnam, 2015.
- Y. Zhang, **A. Panangadan** and V. K. Prasanna, FP-CPNNQ: A Filter-Based Protocol for Continuous Probabilistic Nearest Neighbor Query, *20th International Conference on Database Systems for Advanced Applications (DASFAA)*, Hanoi, Vietnam, 2015.
- O. Patri, K. Singh, P. Szekely, **A. Panangadan** and V. K. Prasanna, Personalized Trip Planning by Integrating Multimodal User-generated Content, *Ninth IEEE International Conference on Semantic Computing (IEEE ICSC)*, Anaheim, California, 2015.
- O. Patri, A. Sharma, H. Chen, G. Jiang, **A. Panangadan** and V. K. Prasanna, Extracting discriminative shapelets from heterogeneous sensor data, *IEEE International Conference on Big Data (IEEE BigData)*, Washington DC, 2014.
- G. Harris, **A. Panangadan** and V. K. Prasanna, Interactive query refinement for Boolean search, *Semantic Analysis of Documents Workshop (SemADoc 2014), ACM Symposium on Document Engineering*, Fort Collins, September 2014.
- Y. Zhang, **A. Panangadan** and V. K. Prasanna, UFOM: Unified fuzzy ontology matching, *The IEEE International Conference on Information Reuse and Integration (IRI 2014)*, San Francisco, California, 2014.
- G. Harris, **A. Panangadan** and V. K. Prasanna, Peer review in online forums: classifying feedback-sentiment, *The IEEE International Conference on Information Reuse and Integration (IRI 2014)*, San Francisco, California, 2014.
- O. Patri, **A. Panangadan**, C. Chelmis and V. K. Prasanna, Extracting discriminative features for event-based electricity disaggregation, *2nd IEEE Conference on Technologies for Sustainability (SusTech)*, Portland, 2014.
- O. Patri, V. Sorathia, **A. Panangadan** and V. K. Prasanna, The Process-oriented Event Model (PoEM) – a conceptual model for industrial events, *8th ACM*

International Conference on Distributed Event-Based Systems (DEBS 2014), Mumbai, 2014.

- H. Chu, Y. Xia, **A. Panangadan** and V. K. Prasanna, Wait-free primitives for initializing Bayesian network structure learning on multicore processors, *The 3rd International Workshop on Parallel and Distributed Computing for Large Scale Machine Learning and Big Data Analytics (ParLearning), 28th IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, Phoenix, 2014.
- O. Patri, **A. Panangadan**, V. Sorathia and V. K. Prasanna, Semantic management of enterprise integration patterns: a use case in Smart Grids, 10th Workshop on Information Integration on the Web (IIWeb 2014), 30th IEEE International Conference on Data Engineering (ICDE), 2014.
- **A. Panangadan**, S. Monacos, S. Burleigh, J. Joswig, M. James, E. Chow, A. Talukder and K. Chu, A system to provide real-time collaborative situational awareness by Web enabling a distributed sensor network, International Workshop on Sensor Web Enablement (SWE), 20th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Redondo Beach, California, November 6, 2012.
- **A. Panangadan** and A. Talukder, Interleaving wavelet coefficients for adaptive data transmission from pervasive sensing systems, *International Conference on Computer Communication Networks (ICCCN),* Maui, Hawaii, 31 July – 4 August, 2011.
- S. Liu, **A. Panangadan**, C. Raghavendra, and A. Talukder, Learning a policy for coordinated sampling in Body Sensor Networks, *Body Sensor Networks (BSN),* Dallas, 23 – 25 May, 2011.
- S. Liu, **A. Panangadan**, A. Talukder, and C. Raghavendra, Machine learning for automatic patient monitoring and prioritization using body sensor network systems, *18th Medicine Meets Virtual Reality International Conference (MMVR 18)*, Newport Beach, California, 8 – 12 February, 2011.
- S. Liu, **A. Panangadan**, A. Talukder, and C. Raghavendra, Compact representation of coordinated sampling policies for body sensor networks, Workshop on Advances in Communication and Networks (Smart Homes for Tele-Health), *IEEE Global Communication Conference (GlobeCom)*, Miami, Florida, 6 – 10 December, 2010.
- K. B. Cooper, R. J. Dengler, N. Llombart, A. Talukder, **A. Panangadan,** C.S. Peay, I. Mehdi and P. H. Siegel, Fast high-resolution terahertz radar imaging at 25 meters, *SPIE Defense, Security, and Sensing*, International Society for Optics and Photonics, 2010. pp. 76710Y-76710Y.
- **A. Panangadan** and A. Talukder, A variant of particle filtering using historic datasets for tracking complex geospatial phenomena, *18th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems,* San Jose, 2 – 5 November, pp. 232-239, 2010.
- Talukder and **A. Panangadan**, Integrating mobile robots with coastal sensor networks for marine event response management, Workshop on Robotics for Environmental Monitoring, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS),* Taipei, 22 October, 2010.
- **A. Panangadan**, S. Ho, and A. Talukder, Cyclone tracking using multiple satellite image sources, *17th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems,* Seattle, 4 – 6 November, pp. 428-431, 2009.

- S. Liu and **A. Panangadan**, Evaluation of a Markov Decision Process-based coordinated sampling method, Workshop on Sensor Networks for Earth and Space Science Applications, *8th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN),* San Francisco, 16 April, 2009.
- S. Liu, **A. Panangadan**, C. Raghavendra, and A. Talukder, Poster abstract: MDP framework for sensor network coordination, *8th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN),* San Francisco, 13 – 16 April, 2009.
- Talukder and **A. Panangadan**, Online visualization of adaptive distributed sensor webs, *IEEE Aerospace Conference*, Big Sky, Montana, 7 – 14 March, 2009.
- Talukder, **A. Panangadan**, A.F. Blumberg, T. Herrington, and N. Georgas, Improving the forecast accuracy of an ocean observation and prediction system by adaptive control of the sensor network, *Eos Trans. AGU*, 89(53), Fall Meeting Supplement, Abstract IN31A-1120, 2008.
- Talukder, **A. Panangadan**, A. Blumberg, T. Herrington, and N. Georgas, Improving the science return from coastal sensor webs using autonomous predictive control and resource management. *Eighth Annual Earth Science Technology Conference*, University of Maryland, June 24 – 26, 2008.
- Talukder, **A. Panangadan**, T. Herrington, A. Blumberg, and N. Georgas. Autonomous adaptive resource management in sensor network systems for environmental monitoring. In *IEEE Aerospace Conference*, Big Sky, Montana, 1 – 8 March, 2008.
- M. Venugopal, K.E. Feuvrel, D. Mongin, S. Bambot, M. Faupel, **A. Panangadan**, A. Talukder, and R. Pidva. Clinical evaluation of a novel interstitial fluid sensor system for remote continuous alcohol monitoring, *IEEE Sensors Journal*, 8(1), pages 71-80, 2008.
- Talukder, S. M. Ali, **A. Panangadan**, and L. Chandramouli. Predictive controller for heterogeneous sensor network operation in dynamic environments. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems* (*IROS*), IEEE Press, pp. 1133-1139, 2005.
- **A. Panangadan**, S. M. Ali and A. Talukder. Markov decision processes for control of a sensor network- based health monitoring system. In *Proceedings of the Seventeenth Innovative Applications of Artificial Intelligence Conference (IAAI),* AAAI Press, Menlo Park, Calif., pp. 1529-1534, 2005.
- Talukder, S. M. Ali, **A. Panangadan**, C. Jadhav, R. Pidva, R. Bhatt, L. Chandramouli, and S. Monacos. Optimal server scheduling and power management in sensor networks. In *Optical Pattern Recognition XVI*, *Proceedings of SPIE*, vol. 5816, pp. 221-232, 2005.
- **A. Panangadan**, M. Mataric and G. Sukhatme. Identifying human interactions in indoor environments. In *Proceedings of the Third International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, IEEE Computer Society, pp. 1308-1309, 2004.
- **A. Panangadan**, M. Mataric and G. Sukhatme. Detecting anomalous human interactions using laser range-finders. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems* (*IROS*), IEEE Press, pp. 2136-2141, 2004.

- **A. Panangadan** and M.G. Dyer. Learning spatial and temporal correlation for navigation in a 2-dimensional continuous world. In *Proceedings of the 19th International Conference on Machine Learning (ICML)*, Morgan Kaufmann, pp. 474-481, 2002.
- **A. Panangadan** and M.G. Dyer. Goal sequencing for construction agents in a simulated environment. In *Proceedings of the International Conference on Artificial Neural Networks (ICANN)*, Springer, pp. 969-974, 2002.
- **A. Panangadan** and M.G. Dyer. Learning social behaviors without sensing. In *From Animals to Animats 7: Proceedings of the 7th International Conference on Simulation of Adaptive Behavior (SAB)*, Bradford Book/MIT Press, 2002.
- **A. Panangadan** and M.G. Dyer. Construction by autonomous agents in a simulated environment. In *Proceedings of the International Conference On Artificial Neural Networks (ICANN)*, Springer, pp. 963-970, 2001.
- G. Chao, **A. Panangadan** and M.G. Dyer. Learning to integrate reactive and planning behaviors for construction. In *From Animals to Animats 6: Proceedings of the 6th International Conference on Simulation of Adaptive Behavior (SAB)*, Bradford Book/MIT Press, pp. 167-176, 2000.

NON-REFEREED PUBLICATIONS

- C. M. Cheung, P. Goyal, G. Harris, O. Patri, **A. Panangadan**, C. Chelmis, R. McKee, M. Theron, T. Nemeth, and V. K. Prasanna, Rapid Data Integration and Analysis for Upstream Oil and Gas Applications. *SPE Annual Technical Conference and Exhibition (ATCE)*, September 2015, Houston, TX, USA, 2015
- O. Patri, N. Reyna, **A. Panangadan** and V. K. Prasanna, Predicting Compressor Valve Failures from Multi-Sensor Data, *2015 SPE Western Regional Meeting*, SPE WRM, Garden Grove, California, 2015.
- O. Patri, **A. Panangadan**, C. Chelmis, R. McKee and V. K. Prasanna, Predicting failures from oilfield sensor data using time series shapelets, *91st Society of Petroleum Engineers Annual Technical Conference and Exhibition*, SPE ATCE, Amsterdam, 2014.
- **A. Panangadan** and G. Sukhatme. Data segmentation for region detection in a sensor network. CRES Technical Report 05-005, University of Southern California, 2005.
- **A. Panangadan**. Construction using autonomous agents in a simulated environment. PhD Thesis, Computer Science Department, University of California, Los Angeles, 2002.

PATENTS

- S. P. Monacos and **A. Panangadan**. Wireless Sensor Node for Autonomous Monitoring and Alerts in Remote Environments, United States Patent No. 9,070,268 B2, assignors to California Institute of Technology, June 30, 2015.
- A. Srivastava, **A. Panangadan**, C. Chelmis, V. K. Prasanna. Models for Word Relatedness using Inter-Context Similarity, assignors to Chevron USA Inc. Filed June 2014.

- O. P. Patri, **A. Panangadan**, C. Chelmis, N. Reyna, R. G. McKee. Shapelet-based oilfield equipment failure prediction and detection, assignors to Chevron USA Inc. Filed January 2015.
- O. Patri, V. Sorathia, **A. Panangadan**, and V. K. Prasanna. Complex Event Processing for Dynamic Data, United States Patent Application 14/177,099, assignors to Chevron USA Inc. Filed February 2014.
- Y. Zhang, **A. Panangadan**, R. G. McKee, M. Theron, B. D. Gamble, V. K. Prasanna. System and method for fuzzy ontology matching and search across ontologies, assignors to Chevron USA Inc. Filed April 2014.

Research Awards

DARPA Forecasting Chikungunya Challenge 2015
Best Presentation Award
DARPA

NASA Space Act Award and Certificate of Recognition 2009
Online 3D Visualization of Large-Area Distributed Sensor Web Predictions for Coastal and Environmental Monitoring
NASA (Award #NPO 46899)

Service

Professional Service

General Chair:
- 6th International Workshop on Parallel and Distributed Computing for Large Scale Machine Learning and Big Data Analytics (ParLearning) at IPDPS 2017

Vice General Co-Chair:
- 24th IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC 2017); 25th IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC 2018)

Publicity Chair:
- 23rd IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC 2016)

Organizing Committee:
- 5th International Workshop on Parallel and Distributed Computing for Large Scale Machine Learning and Big Data Analytics (ParLearning) at IPDPS 2016
- 4th International Workshop on Parallel and Distributed Computing for Large Scale Machine Learning and Big Data Analytics (ParLearning) at IPDPS 2015

Steering Committee:
- International Workshop on Parallel and Distributed Computing for Large Scale Machine Learning and Big Data Analytics (ParLearning) at IPDPS 2018, 2019

Program Committee:

- IEEE International Conference on Tools with Artificial Intelligence (ICTAI) 2016-2021
- Workshop on Data Science for Future Energy Systems, IEEE International Conference on High Performance Computing (HiPC 2019)
- IEEE International Conference on Smart City Innovations (SCI 2017)
- International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD 2017)
- IEEE International Workshop on Security, Trust, Privacy and Analytics (STPA 2016) held in conjunction with 30th IEEE International Conference on Advanced Information Networking and Applications (IEEE AINA-2016)
- IEEE International Conference on High Performance Computing (HiPC 2015, HiPC 2018, HiPC 2020)
- International Workshop on Scalable Computing For Real-Time Big Data Applications (SCRAMBL) at CCGrid'14
- International Workshop on Crowdsourced and Volunteered Geographic Information at ACM SIGSPATIAL GIS 2012
- Workshop on Sensor Networks for Earth and Space Science Applications (ESSA) at IPSN 2009
- Twentieth National Conference on Artificial Intelligence (AAAI 05)

Local Arrangements Committee:

- International Joint Conferences on Artificial Intelligence (IJCAI 2009)

Reviewer:

Journals: ACM Transactions on Knowledge Discovery from Data, Big Data Research, Journal of Parallel and Distributed Computing, International Journal on Artificial Intelligence Tools, Future Generation Computer Systems, Artificial Intelligence in Medicine, IEEE Transactions on Parallel and Distributed Systems, International Journal of Distributed Sensor Networks, IEEE Sensors Journal, IEEE Systems Journal, IEEE Communications Magazine, IEEE Transactions on Human-Machine Systems, International Journal of Computational Intelligence and Healthcare Informatics, IEEE Transactions on Image Processing, Journal of Applied Optics, International Journal of Social Robotics, Cities, International Journal of Production Economics

Conferences: IEEE Smart City Innovations WiP, IEEE Intelligent Transportation Systems Conference, International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), 24th International World Wide Web Conference (WWW 2015) poster session , 35th IEEE International Conference on Distributed Computing Systems (ICDCS 2015), International Conference on Data Mining, IEEE Aerospace Conference, IEEE/RSJ 2010 International Conference on Intelligent Robots and Systems

Grant reviewer:

CSU Program for Education and Research in Biotechnology (CSUPERB) New Investigator Grant Program, 2018 and 2020.

Institutional Service

College of Engineering and Computer Science, California State University, Fullerton

Coordinator, GE Digital CSU Challenge	2016-2018
ECS Faculty Learning Community on Assessment	2016-17
Faculty Mentor, Graduate Student Mentoring Program	2016-17
Commencement Faculty Marshall	2017-2019

Department of Computer Science, California State University, Fullerton

Department Search Committee member	2021-22
Assessment Committee member	2015-17, 2018-9
Undergraduate Committee member	2015-18
Faculty co-advisor, ACM student club	2017-
Faculty Liaison, Supplementary Instruction (SI) program	2017-18

Computer Science Department, UCLA

Teaching Assistant Coordinator	2001-02

Community Service

Attendee: 9/21/2019
How to End Homelessness Symposium

Invited Lecture: 1/10/2019
Applications of Machine Learning
Post-graduate Department of Computer Science
St. Thomas' College (Autonomous), Thrissur, Kerala, India

Speaker: 2015
Training program on Role of Technology in Watershed Management at College of the Extended University, Cal Poly, Pomona

Judge: 2004, 2007, 2011, 2013, 2015, 2017, 2018
California State Science Fair

Service Awards

CSU Fullerton Faculty Advisor of Distinction 2019
Academic Advising Professional Development Committee and the Student Success Team

CSU Fullerton Faculty Recognition for Service 2017
Recognition of Extraordinary and Sustained Service

Curriculum Vitae

Christopher Ryu
Professor
Department of Computer Science
California State University, Fullerton
Email: tryu@fullerton.edu Phone: (657) 278-7231

Education
Ph.D., Computer Science, University of Houston, Texas, 1998.

Professional Experience
- Assistant Professor, Associate Professor, and Professor, Department of Computer Science, California State University, Fullerton, 1999 – present
- Software engineer for the development of an oil and gas utility management system, maintained an IBM legacy system, EDS and Volts Group, 1997 – 1999 and software engineer for the development of Material Requirements Planning (MRP) system, Handok, 1986 – 1989

Professional Activities (in the last ten years)
- A reviewer of program performance for the M.S. program at CSU-LA, 2020
- Attended the workshops and conferences on "The future of STEM: Improving Latinx Students' Access, Retention, and Completion Rates by AAHHE, LATINX student success institute", Costa Mesa, CA, February 2020
- Attended AWS conference "AWS re:Invent" and received training on "Serverless application development" and "Deep learning using AWS," Las Vegas, NV, December 2019
- An editorial board member for KSII Transactions on Internet and Information Systems, 2013 - present
- A reviewer for Journal of Cluster Computing, 2013 – present
- A program committee member, International IEEE Conference on Tools with Artificial Intelligence, 2016, 2017
- A reviewer for the International Journal on Artificial Intelligence Tools, World
- Scientific, 2016
- A reviewer for UC-Riverside federal research grant proposal, National Center for Sustainable Transportation, 2015
- A reviewer for the International Journal on Artificial Intelligence Tools, 2016
- A reviewer for UC-Riverside federal research grant proposals, National Center for Sustainable Transportation, 2016
- A reviewer of International Journal of Distributed Sensor Networks, 2013
- An invited keynote speaker for the Second International Conference on Smart Media and Applications, Kota Kinabalu, Malaysia, 2013
- A reviewer for International Journals of Distributed Sensor Networks, 2013
- A program committee member for RFD database conference, 2012
- A reviewer for Biomedcentral, 2012
- A reviewer for IEEE Systems, Man, and Cybernetics, 2012

In addition to the above activities, I served as a reviewer and program committee member for more than 20 different conferences, journals, and workshops.

Awards

- A faculty advisor of distinction, California State University, Fullerton, 2020
- Contribution award towards the globalization of the campus, California State University, Fullerton, 2010
- Outstanding teacher and scholars from California State University, Fullerton, 2005
- Outstanding teacher (collaborative teaching), California State University, Fullerton, 2008

Research Interests

- Machine learning, Data Science, Digital Music, Artificial Intelligence, Computational Finance, Software Design and Architecture, Ethics

Publications (in the last 10 years)

- B. Cong, C. Ryu, and R. Unnikrishnan, "Make Your Data Work: Infusing CMMI Culture in Assessment and Continuous Improvement for ABET Accreditation," Proceedings of the American Society for Engineering Education (ASEE) Annual Conference, Montreal, Canada, June 22-26, 2020
- C. Ryu, J. John, and J. Park, "An Online Learning Algorithm to Improve the Fuel Efficiency of Natural Gas", U.S.-Korea Conference on Science and Technology (UKC), Chicago, IL, 2019
- P. Roy, C. Ryu, S. Dong, C. Park, Development of a Natural Gas Methane Number Prediction Model, Journal of Fuel, Elsevier, 2019
- P. Roy, C. Ryu, and C. Park, Predicting Wobbe Index and Methane Number of a Renewable Natural Gas by the Measurement of Simple Physical Properties, Vol 224, Journal of Fuel, Elsevier, 2018
- C. Ryu and R. Rivas, "Writing a New Song using AI", The US-Korea Conference on Science, Technology, and Entrepreneurship, Washington D.C., 20017
- J.S. Chan and C. Ryu, "A Monte Carlo-based Approach to Improve Classification Accuracy", International Conference on Smart Media and Applications, Kota Kinabalu, Malaysia, 2013.
- P. Danaee and C. Ryu, "Regression Analysis by Incorporating Sector Dynamics for Financial Time Series Data", The International Conference on Data Mining, Las Vegas, Nevada, 2013
- In addition to these, I published more than 40 articles since I joined the CSUF

Grants

- C. Ryu (PI); $292,159; Demonstration of Smart Combustion Technology using Natural Gas Fuel Quality Sensor, sponsored by California Energy Commissions, collaboration with a team at UCR, 2018 - 2021
- C. Ryu (PI); Fuel Characterization and Property Prediction Model for Variable-blend Natural Gas Vehicle Technology; $7,500; RSCA incentive grant, 2016
- C. Ryu (PI); A Web-based Telecommunications Link and Orbital Analysis, Simulation, and Operation; $200,863; NASA-Jet Propulsion Laboratory; 2002 - 2009
- C. Ryu (co-PI) with M. Tolmasky, K. Kantardjeff, A. Cohen, D. Eernisse; Decontamination of affected areas after a bio-terrorist attack; $24,000; University Mission & Goals; 2003
- C. Ryu (Consultant) with Joyce K. Ono, Judith Kandel, Merri Lynn Casem, and William J. Hoese; Development of Faculty Collaboratives to Assess Achievement of Student Learning Outcomes in Critical Thinking in Biology Core Courses; $444,005; NSF; 2002 - 2005
- C. Ryu (co-PI) with H. Chung; Developing Performance Model and Adaptive Control Components for Brushless DC Motor based on Computer Simulation and Intelligent Learning Approaches; $139,111; UMC; 2001 ~ 2002
- C. Ryu; Data Model and User Interface for ASSIST Scheduling Module Engine; $9,800. Lockheed Martin Missiles & Space; 2000
- C. Ryu; Natural-Language Understanding Database Query Interface System; $5,000; CSU Program for Research, Scholarship, and Creative Activity, 2000

Department Service

- Served as chair for the Computer Science Department, 2018 – 2021
- Attended Google in Residence (GIR) on-board meeting, Atlanta, Georgia, 2018
- The chair of the search committee, 2014, 2017
- The ABET coordinator, 2012 - 2014
- The program coordinator for the Master's Degree in Software Engineering (MSE), 2008 - 2011
- The graduate coordinator, 2007 - 2008
- The undergraduate coordinator, 2003 - 2005
- Established the International Honor Society for the Computer Science (UPE) at CSUF and the first advisor, 2005
- Served numerous departmental committees, including the graduate committee, commencement committee, instructional resource committee, the executive committee, undergraduate committee, library committee, and curriculum assessment committee since I joined CSUF

College Service

- A member of the department personnel committee (DPC) for the mechanical engineering department and computer engineering program, 2014, 2015
- Presented the data integration and information retrieval at the ECS technology breakfast, 2005
- A scholarship committee member for Computer Science, Engineering Technology, Math (CSEM), 2002 - 2004
- Visited Unisys Corporation for a possible collaboration with the College of Engineering and Computer Science and student recruitment, 2003

University Service

- An academic senate member of outstanding professor committee, 2016 - 2017
- A member of the Faculty Personnel Committee (FPC), 2011 - 2013
- A member of the University strategic planning member, 2010
- A member of performance review for the ISDS's online IT program, the college of business, CSUF, 2009
- An ad hoc committee member for roles and missions of FDC, 2009
- A member for the academic senate IT committee, 2005
- One of the key members for the interdisciplinary project, "Genomic Data Warehouse and Automatic Sequence Pattern Discovery and Management," 2001 – 2006
- One of four planning team members for the Center for the Applied BioComputing, BioEngineering, and BioPharmaceutical Studies (CABS) at CSUF, 2003
- A panel member for "Writing Your Professional Development Plan (PDP)" Workshop sponsored by FDC, 2002
- The chair of Academic Senate Extended Education Committee, 2001 – 2002

Community Service

- Advised many local companies for the development of software systems to execute their key business goals and to automate their business operations since 2000
- Provided technical advice to Francis-Mustoe & Co. on the current status of IT infrastructure and desirable upgrade for future business operation, 2008. As a result of this service, the company donated $2,500 to the college and $12,905 to support my research projects
- Southern California Chapter president for the Korean-American Scientists and Engineers Association (KSEA), 2006
- An assistant coach for a local girls' soccer club organized by Junior United Soccer Association (JUSA), Placentia, CA, 2001

Michael Shafae
Curriculum Vitae

mshafae@fullerton.edu http://michael.shafae.com

Education

Ph.D.	2007	Information & Computer Science University of California, Irvine
M.S.	2002	Information & Computer Science University of California, Irvine
B.S.	1999	Computer Science University of California, Santa Cruz
B.A.	1999	Politics University of California, Santa Cruz

Teaching Interests

Computer graphics, game development, web applications

Research Interests

Parallel rendering, tiled displays, graphics clusters, level-of-detail rendering

Dissertation Title

A General Cost Model for Sort-First Parallel Graphics Processing

Academic Experience

2013–present	Associate Professor, Department of Computer Science School of Engineering and Computer Science California State University, Fullerton
2015–2018	Department Chair, Department of Computer Science School of Engineering and Computer Science California State University, Fullerton
2007–2013	Assistant Professor, Department of Computer Science School of Engineering and Computer Science California State University, Fullerton

Refereed Publications

Florian Zitzelsberger, Michael Shafae, *Markerless Performance Capture of Hand Gestures*, ISAST Transactions on Computers and Intelligent Systems, Volume 4, No. 1 (2012) 1-6

Ashish Patel, Michael Shafae, *A Cake Cutting Approach to Rezoning School Districts*, ISAST Transactions on Computers and Intelligent Systems, Volume 4, No. 1 (2012) 33-41

Michael Shafae, Murtaza Virji, xtine burrough, *Your Neighbors' Biz: Measuring Trust Relationships in Online Cottage Industries*, ISAST Transactions on Computers and Intelligent Systems, Volume 2, No. 2 (2010) 77-86

Thomas Joy, Michael Shafae, *An Application of Motion Control and Motion Planning*, In Proceedings of International Conference of Computing in Engineering, Science and Information, 2009, Fullerton, CA.

Michael Shafae, *Large Displays for Collaborative Visualization*, In Proceedings of Thirty Seventh Annual Meeting of Western Decision Science Institute, 2008, San Diego, CA.

Xiaohong Bao, Renato Pajarola, Michael Shafae, *SMART: An Efficient Technique for Massive Terrain Visualization from Out-of-core*, In Proceedings of Vision, Modeling and Visualization, 2004, Stanford, CA.

Michael Shafae, Renato Pajarola. *DStrips: Dynamic Triangle Strips for Real-Time Mesh Simplification and Rendering.* In Proceedings of Pacific Graphics 2003, Canmore, Alberta, Canada.

Christopher Campbell, Michael Shafae, Suresh K. Lodha and D. Massaro. *Multimodal Visualization of Multidimensional Visible Speech Data.* In Proceedings of The International Community for Auditory Display 2003, Boston, MA.

Gloria Mark, Ulrik Christensen and Michael Shafae. *A Methodology Using a Microcamera for Studying Mobile IT Usage and Person Mobility.* Position paper for the Workshop: Mobile Communications: Understanding Users, Adoption, and Design at CHI 2001, Seattle, WA.

Posters & Other Refereed Publications

Jyenny Babcock, Su Swarat, Albin Vinoy, Michael Shafae, Sara Hariri, Curiculum Map Visualization: Promoting Learning Outcomes Alignment, WASC Academic Resource Conference, 2018, Burlingame, CA

Christine Hanson, Michael Shafae. *Your Neighbors' Biz.* Talk and abstract at Futursonic 2008, Manchester, England.

Xiaohong Bao, Renato Pajarola, Michael Shafae. *Live Range Visibility Constraints for Adaptive Terrain Visualization.* Poster and abstract at IEEE Visualization 2004, Austin, TX.

Michael Shafae, Renato Pajarola. *DStrips: Dynamic Triangle Strips for Real-Time Mesh Simplification and Rendering.* Poster and abstract at IEEE Visualization 2003, Seattle, WA.

Michael Shafae, Renato Pajarola. *DStrips: Dynamic Triangle Strips for Real-Time Mesh Simplification and Rendering.* In Slides & Video Proceedings of Eurographics 2003, Granada, Spain.

Service

2020-2021	GI2025 Data Governance Group, CSU Fullerton
2020-2021	CSUF Reopening Leadership Team – CFA Representative
2014-2018	SOAR Advisory Committee, CSU Fullerton
2013–2018	Planning Resource and Budget Committee, Academic Senate, CSU Fullerton
2016–2017	Planning Resource and Budget Committee Chair, Academic Senate, CSU Fullerton
2016–2017	President's Advisory Board, CSU Fullerton
2016-2017	University Faculty Research Committee, Academic Senate, CSU Fullerton
2007–2017	Faculty Advisor, CSU Fullerton Video Game Design Club
2008–2012	Undergraduate Curriculum Committee, Academic Senate, CSU Fullerton
2007–2012	Instructional Resource Committee, Department of Computer Science, CSU Fullerton
2009–2011	Information Technology Committee, Academic Senate, CSU Fullerton
2009–2010	Undergraduate Curriculum Committee, Department of Computer Science, CSU Fullerton
2009	ICCEIS 2009 Computing/Engineering Applications Session Chair
2007–2008	Library Committee, Department of Computer Science, CSU Fullerton
2007–2008	Commencement Committee, Department of Computer Science, CSU Fullerton
2007	Ad-hoc Course Topics Committee, Department of Computer Science, CSU Fullerton

2007	Engineering Systems Management I Session Chair, Annual Meeting of WDSI

Honors, Awards and Grants

2011	EPOCHS Phase II Grant
2010	EPOCHS Phase I Grant
2010	Accessible Technology Initiative Grant
2009	Intramural Jr./Sr. Research Grant, $3,000
2008	Probationary Faculty Stipend
2007	Donald Bren School of ICS Distinguished Student Award
2007	Paul Butterworth Student Award, $4,000
2007	2nd place h.ITEC Entrepreneurship Competition, $2,500

Professional Affiliation

Association for Computing Machinery (ACM)
ACM SIGGRAPH
IEEE Game SIG

KANIKA SOOD

Assistant Professor
Department of Computer Science
California State University, Fullerton
800 N. State College Blvd.
Fullerton, CA 92834

Office: (657) 278-3700
kasood@fullerton.edu

RESEARCH INTERESTS

(1) Modeling techniques for solver suggestions (2) Computer science education and STEM education to optimize available resources and enhance teacher engagement to highlight problem solving practices and applications of computational thinking across disciplines. (3) Applying machine learning techniques for cancer prognosis, solar panel performance enhancement.

EDUCATION

University of Oregon, Oregon, USA — June 2019
PhD, Computer and Information Science — GPA 3.77 (Scale of 4)
Advisor: Boyana Norris
Title: Solver suggestion techniques for large sparse linear systems

University of Oregon, Oregon, USA — Sep 2012 - Jun 2014
M.S. Computer and Information Science — GPA 3.70 (Scale of 4)

Mody Institute of Technology & Science, Rajasthan, India — Aug 2007- May 2011
B.Tech, Computer Science — GPA 8.23 (Scale of 10)

PROFESSIONAL EXPERIENCE

- **University of Oregon,** *Research Assistant, High Performance Computation Lab* — Sep 2014- Jun 2019
  Design and build performance model for optimal numerical method selection for large sparse linear systems for Portable Extensible Toolkit for Scientific Computing (PETSc). Model the convergence behavior and the communication overhead for parallel Krylov methods to make solver recommendations.
- **Argonne National Lab- University of Oregon,** *Subcontract intern* — Jun 2018- Sep 2018
- **Argonne National Lab,** *Givens Associate* — Jun 2017- Sep 2017
  Develop methodology for analyzing revision control and issue tracking data to estimate productivity and analyse ECP projects. Develop new productivity metrics and test them on multiple projects. Generate estimates of effort and productivity improvement or degradation over a given time period.
- **Schlumberger,** *REMS Intern, Software Technology Innovation Center* — Jun 2016- Sep 2016
  Identify and understand the I/O pattern in the tomography application for the equation solver module. Set up the environment for the tomography application on Google cloud Storage. Design and run benchmark for serial and parallel evaluation of GCS performance from C++. Rewrite the read pattern for the application using C++ API for GCS. Quantify network latency and bandwidth.
- **University of Oregon,** *Instructor, Computer & Information Science* — Jun 2014- Sep 2014
  Course: *Fluency with Information Technology (CIS 110)*
- **University of Oregon,** *Teaching Assistant* — Sep 2012- Jun 2014
  Courses: Object Oriented Programming, Intro. to Programming and Problem Solving, Fluency with Information Technology, Python Programming
- **SPICE,** *Volunteer* — Jan 2017 - Jun 2019
- **Thinkersmith, WICS, University of Oregon,** *Volunteer* — Nov 2013 - Jun 2019
- **IIT Delhi,** India, *Summer Intern* — Jul 2013 - Sep 2013
- **IBM**, India, *Associate Systems Engineer* — Jun 2011- Aug 2012
  Secure digital distribution of movie content for the first time in Indian theaters via satellite**.** Development server testing and sanity testing for cinema modules. Translated business functionalities into technical solutions and worked with vendor and portal developers for technical implementation.

Partnered with Bharti sales teams for product demonstrations to Bharti's prospective customers.

- **NTPC Ltd**. , India, *Intern* May 2010- Jul 2010

COURSES TAUGHT

Introduction to Machine Learning (CPSC 483), Advanced Database Management System (CPSC 531), Graduate Project (CPSC 597), File Structures and Database Systems (CPSC 332), Professional Ethics in Computing (CPSC 315), The Computer Impact (CPSC 313), Computer Science I (CIS 210), Introduction to Programming (CPSC 120), Fluency with Information Technology (CIS 110)

GRANTS

- **PI,** ORSP Grant for Faculty Support for Scholarly or Creative Productivity 2021-22: $5,000 for Spring 2022
  Understanding Gender And Racial Disparities in STEM
- **PI,** ECS Incentive Grant 2020-2021: 3 WTU Release Time for Spring 2021
  Performance Enhancement in Reconfiguration of Solar Cells using Machine Learning
- **PI,** ECS Incentive Grant 2021-2022: 3 WTU Release Time for Fall 2021
  Correlation Analysis to Quantify Learning Outcomes for Different Modes of Learning

---

PAPER PUBLICATIONS AND COLLABORATED RESEARCH TALKS

- *A Survey of Large-Scale Scientific Software Practices* | *SIAM CSE 2021* | Mar 2021.
- *Data-Driven Analysis of Scientific Software Quality, Availability, and Development Productivity* | *SIAM CSE 2021* | Mar 2021.
- *Power Management of Autonomous Drones Using Machine Learning, 8th IEEE Conference on Technologies for Sustainability (SusTech 2021)* | Jan 2021.
- *Understanding the Landscape of Scientific Software Used on High-Performance Computing Platforms, (IJHPCA 2020)* | Jan 2020.
- *Repository Analysis of Open-source and Scientific Software Development Projects, SIAM-CSE 2019, Spokane, Washington* | Feb 2019.
- *Machine Learning Modeling for Iterative Solver Selection in the Lighthouse Framework, Supercomputing (SC) 2018, Dallas, Texas* | Nov 2018.
- *Iterative Method suggestion techniques for sparse linear systems, 15th Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado* | Mar 2018.
- *Comparative Performance Modeling of Parallel Preconditioned Krylov Methods IEEE International Conference on High Performance Computing and Communications (HPCC)* | Dec 2017.
- *Solver Schemes for Linear Systems,* Comprehensive Position Paper, University of Oregon | Dec 2016.
- *Performance-based numerical solver selection in the Lighthouse framework.* SIAM Journal on Scientific Computing | Mar 2016.
- *Lighthouse: An automated solver selection tool.* Software Engineering for High Performance Computing in Computational Science and Engineering (SEHPCCSE) | Nov 2015.
- *Lighthouse: A taxonomy-based solver selection tool.* Proceedings of the Second Workshop on Software Engineering for Parallel Systems (SEPS) | Oct 2015.
- *Automated Selection of Numerical Solvers.* Technical Report, University of Oregon | Oct 2015.

POSTER PUBLICATIONS

- *Lighthouse: Navigating HPC Numerical Software , WHPC Summit, Vancouver BC* | Apr 2020
- *Analyzing Open-source Scientific Software Projects,* SIAM-CSE 2019, Spokane, WA | Feb 2019 [SIAM-Poster 2019]
- *Iterative Solver Selection Techniques for Sparse Large Systems,* ICPP 2018, Eugene, OR | Aug 2018 [ICPP Poster 2018]
- *Comparative Performance Modeling of Parallel Preconditioned Krylov Methods,* Petsc User Meeting 2017, Boulder, CO | June 2017 [Petsc User Meeting Poster]
- *Maximizing Usability and Performance in Numerical Software,* SIAM-CSE 2017, Atlanta, GA | March

2017 [SIAM Poster 2017]

- *Automating Sparse Linear Solver Selection with Lighthouse*, Supercomputing 2015, Austin, TX | November 2015 [Supercomputing Poster 2015]
- *Automating Sparse Linear Solver Selection,* Systems, Programming, Languages and Applications: Software for Humanity (SPLASH), Pittsburgh, PA | October 2015 [SPLASH Poster 2015]
- *Machine Learning Approaches for Linear Solver Selection*, ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), Eugene, OR | June 2015 [HPDC Poster 2015]

TECHNICAL SKILLS

Languages: Python, C, C++, Java, MySQL
Tools: Eclipse, Netbeans, Coq
Web Technologies: HTML, XML, JavaScript, PHP
Databases: MySQL, DBVisualizer, DB2, phpMyAdmin

PROJECTS

- **Matrix-free approach for selecting iterative Krylov methods** Sep 2017 - Jun 2019
  The Krylov solution of the linearized system is computed by using approximations of matrix-vector products based only on the function computing the current discretized solution approximation at each grid point. Because there is no explicit matrix, it is impossible to compute most of the features used in our ML-based solver selection. Hence, a different set of features must be defined and computed for matrix-free approaches. We present initial results using features based on matrix-free eigenvalue approximation, infinity norm, and structural problem features.
- **Comparative Performance Modeling of Parallel Krylov Methods** Feb 2017 - Sep 2017
  Comparing the scalability of parallel Krylov methods given different input properties without requiring extensive empirical measurements. We consider the PETSc implementations of Newton-Krylov methods to produce scalability rankings based on our new comparative modeling approach. The model-based ranking is validated by comparison with empirical scalability results on a numerical simulation of driven fluid flow in a cavity.
- **Happiness Detection Project** Jan 2017 - Feb 2017
  Face detection followed by smile detection was applied in MATLAB for this work. President election inauguration as input to identify the happy zones in the seating areas. The inauguration photos are segmented into multiple images.
- **Solver Selection in Finite Element Multiphysics Simulations** Feb 2016 - Dec 2016
  Defining a new set of linear system properties, which are used as the features in the machine learning problem specification. We then apply the classification to a set of examples in the MOOSE framework, achieving high accuracy when targeting problems in the more limited domain of finite element multi-physics applications.
- **PhD Directed Research Project** Sep 2014 - Oct 2015
  A generalizable machine learning-based workflow for classifying arbitrary sparse linear systems using different-sized feature sets and a comparative analysis of the solver classification results for a variety of input problems belonging to different domains and various machine-learning methods, achieving up to 87% accuracy in identifying the well-performing linear solution methods in PETSc.
- **Master's Thesis** Jan 2014 - Jun 2014
  Title: Comparison of Functional Dependency extraction methods and an application of DFS
  Given the raw data, normally looking for FD takes exponential time with respect to the number of attributes. Over the past, heuristics have been given to reduce the time using efficient algorithms. My tasks involved reviewing the algorithms and developing a more efficient algorithm.
- **Database Design and Applications** (Masters course project)
  Developed a relational database (using MySQL), implemented advanced features like triggers etc. and web-based applications to access this database (using PHP).
- **Data Classification Project** (Masters course project)
  Worked on and implemented a few classic classification Machine Learning algorithms (ID3, Naïve Bayes, Logistic Regression, Perceptrons etc.) on real life data sets.
- **Leveraging Natural Language Processing On Sentiment Analysis** (Masters course project)
  Leveraged NLTK for the purpose of sentiment analysis on user-generated product reviews using a corpus of reviews extracted from Amazon.com.

HONORS

- Awarded GHC Faculty Scholarship | Virtual — Jul 2021
- Awarded GHC Faculty Scholarship | Florida — Jun 2020
- Awarded SC'18 Outstanding Lightning Talk Award | Texas — Nov 2018
- Awarded SC'18 Volunteer Award | Texas — Aug 2018
- Served as Poster/Demo Judge, Oregon Cyber Security Day | Oregon — Apr 2018
- Speaker at Copper Mountain Conference On Iterative Methods | Colorado — Mar 2018
- Best paper finalist for IEEE HPCC | Thailand — Dec 2017
- Awarded SC'17 Volunteer Award | Colorado — Nov 2017
- Awarded SC'17 Student Travel Award | Colorado | $600 — July 2017
- Awarded PETSc User Meeting Travel Award | Colorado | $655 — Jun 2017
- Awarded SIAM Student Travel Award | Georgia | $800 — Feb 2017
- Served as a mentor on the BE Mentor-Protege Program at SIAM'17 — Feb 2017
- Served on SC16 HPC Undergraduate program panel SC'16 | Utah — Nov 2016
- Awarded 2016 Intern Video Competition Winner | Schlumberger — Aug 2016
- Awarded Erwin and Gertrude Juilfs Scholarship | $1,000 — Jun 2016
- Awarded SE4SCIENCE travel grant | Texas | $500 — May 2016
- Awarded Graduate Research Fellowship — Sep'14 - Jun'19
- Awarded UO Work-Study Award | Oregon — Jun 2013
- Awarded Graduate Teaching Fellowship — Sep'12- Jun'14
- Certified Database Associate of IBM — 2009
- Ranked in the top 5% of undergraduate institution — 2008-2011
- Level-1 certified in French language — 2011
- Literary Head of college club, Xperia — 2009-2011
- Head of college horse riding committee — 2008-2011

OUTREACH ACTIVITIES

- Member, Assessment Committee — Sep 2021- present
- Member, Instructional Resource Committee — Sep 2021- present
- Member, Library Committee — Sep 2021- present
- Chair, Instructional Resource Committee — (Sep 2020 - Aug 2021)
- Member, ECS Diversity Equity and Inclusion Committee — (Sep 2020 - present)
- Member, Executive Committee of the Academic Senate — (Aug 2020 - present)
- Member, Executive Committee at Department level — (Aug 2020 - present)
- Member, ACM-Women in CS Organization, CSUF — (Aug 2019 - present)
- Member, Instructional Resource Committee — (Aug 2019 - Aug 2020)
- Member, CSUF Campaign Congress (ECS) — (Dec 2019 - present)
- Member, ACM — (Jan 2020 - present)
- Mentor, Women in HPC (WHPC) Mentoring Program — (Aug 2020-present)
- Member, Women in HPC (WHPC) — (Aug 2020-present)

COMMUNITY ACTIVITIES

- ACM Student Research Competition Judge for GraceHopper Conference — 2021
- Program Committee Member and Reviewer, ACM Technical Symposium on Computer Science Education (SIGCSE) — (July 2021 - present)
- Technical Committee Member, International Conference on Smart Transportation and Future Mobility CSTFM 2020 Technical Committee Member — (Sep 2020 - present)
- Editorial Board Member, Advances in Machine Learning & Artificial Intelligence Journal. — (Sep 2020 - present)
- Technical Committee Member and Reviewer: IEMTRONICS (International IOT, Electronics and Mechatronics Conference) — (July 2020 - present)

- Reviewer: International Conference On Interdisciplinary Research in Technology & Management (IRTM) (Jan 2021 - present)
- Reviewer: Science Publishing Group (Machine Learning) (Dec 2019 - present)
- Organizer, SIAM Conference on Computational Science and Engineering Minisymposium (Sep 2020)

Yun Tian

Department of Computer Science
California State University, Fullerton
Fullerton, CA 92831

Email: ytian@fullerton.edu
Office: CS-544
Phone: 657-278-2041

Education

May 2013 **Ph.D., Computer Science & Software Engineering,** Auburn University, Auburn, AL

May 2011 **M.S.E., Software Engineering**, Auburn University, Auburn, AL

June 2006 **B.S., Computer Science and Technology**, Northwest University, Xi'an, China

Research Interest

- Cybersecurity
- Cloud Computing & Cloud Security
- Big Data and Data Mining
- Deep Learning
- Distributed Computing
- Social Computing
- Parallel and High Performance Computing
- Modeling and Simulation

Work Experience

Associate Professor, Department of Computer Science, California State University, Fullerton, August 2019-present

Assistant Professor, Department of Computer Science, California State University, Fullerton, August 2013-present

Graduate Research/Teaching Assistant, Computer Science and Software Engineering, Auburn University August, 2006-May 2013

Web Master, Engineering Distance Learning and Outreach Department, Auburn University, August 2008-May 2009

Summer Intern, Business Intelligence Department, Alfa Insurance Company, May-August, 2009

Publications (* CSUF Undergraduate Student, ** CSUF Graduate Student)

Peer Reviewed Conference and Journal Articles

1. P. Hovsepian** and **Y. Tian**, "*Energy Consumption Analysis of Scheduling Algorithms for Cloud Computing Systems*," 2020 10th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, 2020, pp. 0134-0141.

2. V. Khedekar** and **Y. Tian**, "*Multi-Tenant Big Data Analytics on AWS Cloud Platform*," 2020 10th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, 2020, pp. 0647-0653.

3. X.-J. Ruan, H.-Q. Chen, **Y. Tian**, and S. Yin, "*Virtual Machine Allocation and Migration based on Performance-to-Power Ratio in Energy-Efficient Clouds*", PDF Version, Future Generation Computer Systems, Elsevier, vol. 100, pp. 380-394, November 2019.

4. **Y. Tian**, V. Tran and M. Kuerban, "*DOS Attack Mitigation Strategies on SDN Controller*," 2019 IEEE 9th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, January 2019, pp. 0701-0707.

5. Y-F. Jia, **Y. Tian**, Y-J. Li, and P-B. Fu, *"Exponential Discriminative Locality Alignment for Hyperspectral Image Classification"*, the IEEE Geoscience and Remote Sensing Letters (IEEE GRSL), Volume: 14, Issue: 1 , Jan. 2017.

6. **Y. Tian**, M. Gofman, and M. Villa, *Chapter 8 Biometrics in Cloud Computing and Big Data: Trends, Technologies, and Challenges*, in book: Biometrics in a Data Driven World, 2016, pp.245-262

7. B-W. Tian**, **Y. Tian**, Y-J. Sun*, T. Hurt*, W. Ho*, Y-T. Zhang**, D-Q. Chen**, H-S. Lee**, *"A Secure Data Allocation Scheme for Heterogeneous Hadoop Systems: SecHDFS"*, the 35th IEEE International Performance Computing and Communications Conference (IPCCC 2016), Las Vegas, Ne, USA, December, 2016.

8. B-W. Tian**, **Y. Tian**, Y-J. Sun*, T. Hurt*, W. Ho*, Y-T. Zhang**, D-Q. Chen**, H-S. Lee**, *"SecHDFS: A Secure Data Allocation Scheme for Heterogeneous Hadoop Systems"*, Poster Paper, the 11th IEEE International Conference on Networking, Architecture, and Storage (NAS 2016), Long Beach, CA, USA, August, 2016.

9. M. Kuerban**, **Y. Tian**, Q. Yang, and Y-F. Jia, *"FlowSec: DOS attack Mitigation Strategy on SDN Controller"*, Poster Paper, the 11th IEEE International Conference on Networking, Architecture, and Storage (NAS 2016), Long Beach, CA, USA, August, 2016.

10. J-S. Gao**, **Y. Tian** and W. Ho*, *"A Modeling Approach to Cloud-based Mobile Game User Experience"*, The Eighth ASE International Conference on Social Computing (SocialCom 2015), Stanford, USA, August, 2015 (acceptance rate 14.8%).

11. D. Mehta**, W. Ho* and **Y. Tian**, "*Evaluation of Big Data Frameworks: Hadoop and Spark*", The sixth ASE International Conference on Data Science (DataScience 2015), Stanford, USA, August, 2015 (acceptance rate 18.6%).

12. **Y. Tian**, X. Qin, and Y-F. Jia, "*Secure Replica Allocation in Cloud Storage Systems with Heterogeneous Vulnerabilities*", the 10th IEEE International Conference on Networking, Architecture, and Storage (NAS 2015), Boston, USA, August, 2015.

13. Y-F. Jia, Y-J. Li, P-B. Fu, and **Y. Tian**, "*Nearest Feature Line and Point Embedding for Hyperspectral Image Classification*", the IEEE Geoscience and Remote Sensing Letters (IEEE GRSL), Sep. 2014.

14. I. Hashemi**, **Y. Tian**, and Y-F. Jia, "*Transitioning from Management to Engineering*", Poster Paper, the Sixth ASE International Conference on Social Computing (SocialCom 2014), Stanford, USA, May 27-31.

15. **Y. Tian**, M. I. Alghamdi, X.-J. Ruan, J. Xie, and X. Qin, "*Towards A Secure Fragment Allocation Of Files In Heterogeneous Distributed Systems*", Chapter 16, Scalable Computing and Communications: Theory and Practice, Wiley-IEEE Computer Society Press, Jan. 2013.

16. J. Xie, **Y. Tian**, S. Yin, J. Zhang, X. Ruan, X. Qin, "*Adaptive Preshuffling in Hadoop Clusters*", Procedia Computer Science, Volume 18, 2013, Pages 2458-2467, ISSN 1877-0509.

17. X.-J. Ruan, M. I., Alghamdi, Z.-L. Zong, **Y. Tian**, X.-F. Jiang, and X. Qin "*Improving Write Performance by Enhancing Internal Parallelism of Solid State Drives*", 31st IEEE International Performance Computing and Communications Conference, Dec. 2012.

18. J. Zhang, M. I. Alghamdi, X.-F. Jiang, M. Assaf, **Y. Tian**, and X. Qin "*ORCA: An Offloading Framework for I/O-Intensive Applications on Clusters*", 31st IEEE International Performance Computing and Communications Conference, Dec. 2012.

19. S. Yin, **Y. Tian**, J. Xie, X. Qin, X.-J. Ruan, M. I. Alghamdi, and M. Qiu, "*Reliability Analysis for an Energy-Aware RAID System*", Proc. the 30th IEEE International Performance Computing and Communications Conference (IPCCC), Nov. 2011.

20. **Y. Tian**, M.-I. Alghamdi, J. Xie, S. Yin, J. Zhang, M.-K. Qiu, Y.-M. Yang, X. Qin, "*A Secure File Allocation Algorithm for Heterogeneous Distributed Systems*", International Conference on Parallel Processing Workshops, Security in Cloud Computing(ICPP-CloudSec), Sep. 2011.

21. **Y. Tian**, M. I. Alghamdi, Y. Shu, J. Xie, J. Zhang, M. Qiu, Y.-M. Yang, X. Qin, "*Secure Fragment Allocation in a Distributed Storage System with Heterogeneous Vulnerabilities*", Proc. the 6th IEEE International Conference on Networking, Architecture, and Storage (NAS), July 2011.

22. Manzanares, X.-J. Ruan, S. Yin, J. Xie, Z. CY. Ding, **Y. Tian**, J. Majors, and X. Qin, "*Energy Efficient Prefetching with Buffer Disks for Cluster File Systems*", Proc. 39th Intl Conf. on Parallel Processing (ICPP), San Diego, CA, Sept. 2010.

23. J. Xie, S. Yin, X.-J. Ruan, Z.-Y. Ding, **Y. Tian**, J. Majors, and X. Qin, "*Improving MapReduce Performance via Data Placement in Heterogeneous Hadoop Clusters*", Proc. 19th Int'l Heterogeneity in Computing Workshop (HCW), Atlanta, Georgia, Apr. 2010.

24. **Y. Tian**, J.-E. Gilbert, "*Issues about U, U*, P Matrix* (poster)", Richard Tapia Celebration of Diversity in Computing Conference, Portland Oregon, Apr. 2009.

25. K. Rouse, A. Johnson, W. Eugene, C. Hamilton, R. Agarwal, R. Lindsey, **Y. Tian**, D. McCants, J. Bao , C. Seals, "*Alice Computer Club: Expanding the Fun!*", in poster session in STARTS Celebration 2008, Auburn, AL, 2008.

Academic Program Proposal

1. (Faculty Sponsor) "*Proposal to Establish the Center for ECS Center for Cybersecurity in the College of Engineering & Computer Science at CSUF*", Academic Program Office, CSUF.

   Submitted in Spring 2015
   Approved in Fall 2015

Teaching Experience

Course Taught

CPSC 454-Cloud Computing & Security
CPSC471-Computer Communications
CPSC 351-Operating System Concepts
CPSC 120- Introduction to Programming
CPSC 313-The Computer Impact
CPSC 313-The Computer Impact
CPSC 311-Technical Writing

Course Proposed

- Mobile Computing CPSC 515, approved
- Cloud Computing & Security (CPSC 454) Spring 2014, Approved and offering the 1st time in Fall 2015

Professional Development

- Attended and gave two presentations with the titles of "Energy Consumption Analysis of Scheduling Algorithms for Cloud Computing Systems" and "Multi-Tenant Big Data Analytics on AWS Cloud Platform" at 2020 10th IEEE Annual

Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, January 2020.

- Attended and gave a presentation with the title "DOS Attack Mitigation Strategies on SDN Controller" at 2019 9th IEEE Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, January 2019.

- Attended the Global Media Blockchain Summit 2018, UCLA, August 11-12, 2018

- Participated in the *2018 STEM Summer Research Symposium at CSUF*. Together with my students we presented three posters highlighting our research in the area of Machine Learning on Apache Spark, Summer 2018.

- Participated in the *2017 STEM Summer Research Symposium at CSUF*. Together with my students we presented two posters highlighting our research in the area of SDN security in cloud computing, Summer 2017.

- Attended and gave two poster paper presentation with the title of "*SecHDFS: A Secure Data Allocation Scheme for Heterogeneous Hadoop Systems*" and "*FlowSec: DOS attack Mitigation Strategy on SDN Controller*" at the 11th IEEE International Conference on Networking, Architecture, and Storage (NAS 2016), Long Beach, CA, USA, August, 2016.

- Participated in the *2016 STEM Summer Research Symposium at CSUF*. Together with my students we presented one poster highlighting our research in the area of cloud computing, Summer 2016.

- Attended and gave a presentation with the title "Secure Replica Allocation in Cloud Storage Systems with Heterogeneous Vulnerabilities" at the 10th IEEE International Conference on Networking, Architecture, and Storage (NAS 2015), Boston, USA, August 2015.

- Attended and gave a presentation with the title "Evaluation of Big Data Frameworks: Hadoop and Spark" at the *2015 ASE Bigdata Conference* at Stanford, CA, August 2015.

- Attended and gave a presentation with the title "A Modeling Approach to Cloud-based Mobile Game User Experience" at the *2015 ASE SocialCom Conference* at Stanford, CA, August 2015.

- Attended the *8th Symposium on Curriculum Development in Security and* Information Assurance conference (CDSIA), San José State University, April 2015.

- Attended the Accreditation Board for Engineering and Technology (ABET)
- Fundamentals of Program Assessment Workshop held at Seattle, Washington, USA 2014.

- Attended the *EDUCAUSE Annual Conference*, Fall 2013.

- Attended the *7th Symposium on Curriculum Development in Security and Information Assurance conference (CDSIA)*, San José State University, April 2014.

- Supported a pilot study on teaching effectiveness in Computer Science by implementing *Supplemental Instruction (SI)* in my CPSC 120, sections 25 and 26. Now the SI program is a regular academic assistance program in Computer Science Department.

- Attended the *2014 ASE Bigdata/SocialCom/Cybersecurity Conference* at Stanford, CA, May 2014.

- Participated in the *2014 STEM Summer Research Symposium at CSUF*. Together with my students we presented two posters highlighting our research in the area of cloud computing and big data, Summer 2014.

- Visited National Science Foundation and talked with some NSF program directors face-to-face in April 2014.

- Attended the Intramural Grant Workshop at CSUF, January 31, 2014.

Service

Professional Service

Journal Reviewer

1. IEEE Access, July 2018
2. IEEE Communications Magazine, September 2015, 2016
3. Journal of Network and Computer Applications(JNCA), September 2016
4. IEEE Transactions on Network and Service Management, July 2016
5. IEEE Communications Magazine, April 2016
6. IEEE Access, April 2016
7. International Journal of High Performance Computing and Networking (IJHPCN), August 2016
8. IEEE Transactions on Cloud Computing, 2014, 2015, 2016
9. IEEE Transactions on Systems, Man and Cybernetics: Systems, 2014
10. International Journal of Distributed Sensor Networks, 2014
11. IEEE Transactions on Parallel and Distributed Systems (TPDS), 2013
12. Journal of Parallel and Distributed Computing (JPDC), 2012

Technical Program Committee

1. ICNC'18 MCVC (2018 International Conference on Computing, Networking and Communications (ICNC): Mobile Computing and Vehicle Communications)

2. ICNC'19 SCSD (2018 International Conference on Computing, Networking and Communications (ICNC): Social Computing and Semantic Data Mining)
3. The 11th EAI International Conference on Mobile Multimedia Communications,2018(MOBIMEDIA)
4. 2016 International Symposium of Information and Internet Technology (SYMINTECH'2016)
5. The 7th IEEE Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON)
6. IEEE International Performance Computing and Communications Conference (IPCCC) 2016
7. 9th European Alliance for Innovation (EAI) International Conference on Mobile Multimedia Communications(MOBIMEDIA 2016)
8. IEEE International Conference on Computational Science and Engineering (CSE 2015)
9. IEEE International Performance Computing and Communications Conference (IPCCC) 2015
10. International Conference on Mobile Multimedia Communications 2015
11. IEEE International Performance Computing and Communications Conference (IPCCC) 2014
12. IEEE International Conference on Computational Science and Engineering 2014
13. International Conference on Computing, Networking and Communications, Social Computing and Semantic Data Mining (ICNC15 SCSD), 2015
14. ASE International Conference on Big Data Science and Computing, 2014
15. IEEE International Symposium on CyberSpace Safety and Security, 2014

Journal Editor

- JSM Computer Science & Engineering, 2013-present

Conference Reviewer

- The 3rd International Symposium of Information and Internet Technology, 2018 (SYMINTECH 2018)
- IEEE International Conference on Computing, Networking and Communications, ICNC 2017
- IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference, 2016
- IEEE International Conference on Computing, Networking and Communications, ICNC 2016
- IEEE International Conference on Computing, Networking and Communications, ICNC 2015
- IEEE International Performance Computing and Communications Conference, IPCCC 2014
- IEEE International Conference on Networking, Architecture, and Storage, NAS 2012
- IEEE International Conference on Networking, Architecture, and Storage, NAS 2010

Serve to the Department and College

- Department Executive Committee, AY 2018-2019
- Department Undergraduate Committee, AY 2013-2014, AY 2017-2018
- Department Instructional Resource Committee, AY 2016-2017, Chair in AY 2017-2018, AY 2018-2019
- Department Assessment Committee 2017-2018.
- GE/California State University Predix Innovation Challenge faculty advisor, 2016
- Department Faculty Search Committee AY 2013-2014, AY 2014-2015.
- College Commencement Committee, AY 2013-2014, AY 2014-2015.
- Offensive Security Society (OSS) faculty advisor, fall 2013-present.
- ACM Student Chapter faculty advisor, AY 2015-2016 to present.
- ACM-W Student Chapter faculty advisor, AY 2017-2018, AY 2018-2019
- Welcome to California State University of Fullerton Day, Spring 2015
- Welcome to California State University of Fullerton Day, Spring 2014
- College Commencement Committee, Fall 2013 – 2015
- Helped organize the Security Day event in fall 2013 and presented my research

Serve to the University

- URE RAISE Summer Research Experience faculty mentor, 2018
- URE RAISE Summer Research Experience faculty mentor, 2017
- $(STEM)^2$ Summer Research Experience faculty mentor, 2014, 2016
- University Library Committee, Fall 2014-Fall 2016.
- Served as an advisory board member to develop a new non-credit certificate program in Data Science in the University Extended Education, Fall 2013-Spring 2014

Serve to the Community

- Kevin Lam, Diamond Bar High School, Summer 2018
- Summer 2014, I mentored two high school students Minah Kim and Robbie Jones for their Summer Intern Program from Troy High School in our community from June 6th to July 21st.
    - Minah Kim entered the Computer Science Department in New York University fall 2015.
    - Robbie Jones entered the Computer Science Department of Stanford University fall 2015.

Media Interview

- OC Register, *CSUF student team wins innovation challenge,* May 6, 2016
- CSUF News Service, *Meet Yun Tian--Computer Security Research Is Focus of Challenging, Yet Rewarding Work*, December 3, 2013.

Awards and Certificates

Awards

- Served as the faculty advisor for the CSUF team in GE/California State University Predix Innovation Challenge 2016, won first prize and the "green solution" category prize, totally $12,500 awarded
- Graduate Travel Scholarship Award from Auburn University, 2009
- Excellent Graduation Thesis Award, Northwest University, Jun. 2006
- Excellent Student Scholarship, Northwest University, 2004-2005
- Excellent Student Scholarship, Northwest University, 2003-2004
- Excellent Student Scholarship, Northwest University, 2002-2003
- First Prize Award of China Undergraduate Mathematical Contest in Modeling(CUMCM) in Shaanxi Province, China, 2004
- First Prize Award of China Undergraduate Mathematical Contest in Modeling(CUMCM) in Shaanxi Province, China, 2003

Certificates

- Prepare Future Faculty Program, Biggio Center, Auburn University, Aug.2010-May 2011
- Senior System Manager, National Security Agency, USA. Dec. 2010
- Certificate of Achievement Women in Computing, Society of Women in Computing, Auburn University, Spring, 2011
- Certificate of Recognition, R.E.A.L Leadership-Sunshine International Camp, Birmingham, Alabama, Mar. 2009

Grants and Grants in Progress

- (**Co-PI**) "Participation in Industry 5.0-focused Research and Education (GET-INSPIRED) Site" National Science Foundation, Submitted in November 2021, $ 598,908 required
- URE RAISE program summer mentor, $ 4,500 funded, 2018
- (**PI**)ECS Incentive Grant 2017-2018, Funded
- (**Co-PI**) "SPARK: STEM Learning Projects for Adaptive, Relevant Experiences in Cybersecurity", Experiences for Students and Teachers (ITEST), National Science Foundation, Submitted on September 5, 2017, $1,191,361 required
- URE RAISE program summer mentor, $ 3,000 funded, 2017
- $(STEM)^2$ Summer Research mentor, $1,500 funded, 2016
- ECS-Senior Design Project Funding Proposal, 2015, $ 7,000 funded
- 2014 $(STEM)^2$ Summer Research mentor, $6,000 funded
- (**PI**)An intramural grant application to build a functional cloud computing platform was submitted in February, 2014 and rejected.
- (**Co-PI**) "Hazards SEES: Development of comprehensive post-earthquake rainfall induced landslide (PERIL) hazard mitigation framework", National Science Foundation Interdisciplinary Research in Hazards and Disasters, December, 2014, Unfunded.

SHAWN XIONG WANG - Curriculum Vitae
a.k.a XIONG WANG (name changed on Aug 28, 2009)
February 5, 2022

Office:

Department of Computer Science
P.O. Box 6870
California State University, Fullerton
Fullerton, CA 92834-6870
Tel: (657) 278-7258 Fax: (657) 278-7168
Email: xwang@fullerton.edu
URL: http://wang.ecs.fullerton.edu/

Education

Ph.D., Computer and Information Science, New Jersey Institute of Technology, Jan. 2000.
Dissertation: Information Retrieval and Mining in High Dimensional Databases.
M.S., Computer Science, Fudan University, China, 1989.
Thesis: Query Optimization in Knowledge Base Systems.
B.S., Mathematics, Xiamen University, China, 1982.

Professional Memberships

Association for Computing Machinery (ACM)
ACM Special Interest Group on Management of Data (SIGMOD)
IEEE Computer Society

Employment History

Aug. 2011 - present, Professor of Computer Science, California State University, Fullerton.
Aug. 2005 - Aug. 2011, Associate Professor of Computer Science, California State University, Fullerton.
Aug. 2000 - Aug. 2005, Assistant Professor of Computer Science, early promotion to Associate Professor in Aug. 2005, California State University, Fullerton.
Aug. 1999 - May 2000, Special Lecturer of Computer Science, New Jersey Institute Of Technology.

Monograph

Xiong Wang, Information Retrieval and Mining in High Dimensional Databases, ISBN 0-599-63177-5, 160 pages, ProQuest Digital Dissertations, 2000.

Books

Shawn X. Wang ed., Current Trends in Computer Science and Mechanical Automation Vol. 2, ISBN 978-3-11-058499-8, 682 pages, 2018.
Shawn X. Wang ed., Current Trends in Computer Science and Mechanical Automation Vol. 1, ISBN 978-3-11-058497-4, 660 pages, 2018.

Book Chapters

Xiong Wang, Data Management in Three-Dimensional Structures, in Encyclopedia of Data Warehousing and Mining, John Wang, editor, ISBN 1-591-40557-2, Idea Group Publishing, 2005.

Xiong Wang and Jason T.L. Wang, Chapter 7. Protein Classification: A Geometric Hashing Approach, in Computational Biology and Genome Informatics, J.T.L. Wang, et al.,editors, ISBN 9-812-38257-7, World Scientific Publishing Company, 2003.

Xiong Wang, Chapter 7 & 8 of Database Theory and New Areas, Baile Shi, et al.,editors, ISBN 7-040-03135-3, Higher Education Publishing House, China, 1990. (Won 2nd Award of best book of the year, issued by the Educational Commission of China.)

Recent Referred Journal Articles

1. Justin Lee and Shawn X. Wang, A Software Tool for Protein Sequence Alignment, International Journal of Bioinformatics Research and Applications, Vol. 16, No. 4, 2020, pp. 319 - 335.
2. Hussein Al-Barazanchi, Abhishek Verma, and Shawn X. Wang, Intelligent Plankton Image Classification with Deep Learning, *International Journal of Computational Vision and Robotics*. 8(6), pp. 561 - 571, 2018.
3. Shawn Wang, Susamma Barua, Kunal Desai, and Swaroop Deshmukh, "GeoTNavi smart navigation using geo-temporal traffic information," *International Journal of Data Mining, Modelling and Management*, Volume 5, Number 1, pp. 20 - 36, 2013.
4. Junilda Spirollari, Shawn XiongWang, and Jason T.L.Wang, "Using folding ensemble and stem probability maximization to predict H-type pseudoknots*," Tsinghua Science and Technology*, Volume 17 Number 6, pp. 691 - 700, 2012.
5. Xiong Wang, "ER Modelling - A Zoom in and Zoom out Approach," *International Journal of Data Mining, Modelling, and Management*, Volume 1, Number 4, pp. 357 - 374, 2009.
6. Jason T.L. Wang, Xiong Wang, Dennis Shasha, and Kaizhong Zhang, "MetricMap: An Embedding Technique for Processing Distance-Based Queries in Metric Spaces*," IEEE Transactions on Systems, Man, and Cybernetics - Part B: Cybernetics*, Volume 35, Number 5, pp. 973 - 987, 2005.
7. Xiong Wang, "Finding Patterns on Protein Surfaces: Algorithms and Applications to Protein Classification," *IEEE Transactions on Knowledge and Data Engineering*, Volume 17, Number 8, pp. 1065 - 1078, 2005.

Recent Referred Conference Publications (☺ indicates student author)

1. Jimmy Li and Shawn X. Wang, Detecting Active Sites in Protein 3D Structures, Proceeding of The 4th International Conference on Compute and Data Analysis,, pp. 175 - 178, March 9 - 12, 2020, San Jose, CA.
2. Yu Kou☺ , Zhi Hong ☺, Yun Tian and Shawn X. Wang, Adaptation of RF and CNN on Spark, Proceeding of The 4th International Conference on Compute and Data Analysis, pp. 118 - 122, March 9 - 12, 2020, San Jose, CA.

3. Hussein Al-Barazanchi☺ (MS'17), Abhishek Verma, and Shawn X. Wang, Performance Evaluation of Hybrid CNN for SIPPER Plankton Image Classification, The Proc. of the IEEE Third International Conference on Image Information Processing, pp. 551 - 556, December 2015, Himachal Pradesh, India.
4. Hussein Al-Barazanchi☺ , Abhishek Verma, and Shawn X. Wang, Plankton Image Classification Using Convolutional Neural Networks, The Proc. of the 19th International Conference on Image Processing, Computer Vision, and Pattern Recognition, pp. 455 - 461, July 2015, Las Vegas, Nevada, USA.
5. Padideh Danaee☺ (MS'12), Kevin Wortman, and Shawn Xiong Wang, Pseudoknotted RNA Secondary Structure Detection Using an Artificial Neural Network, International Symposium on Bioinformatics Research and Applications, May 2013, North Carolina, USA.
6. Junilda Spirollari, Jason T.L. Wang, and Shawn Xiong Wang, A New Approach to RNA Pseudoknot Prediction, The 4th International Conference on Bioinformatics and Computational Biology, March 2012, Las Vegas, Nevada, USA.
7. Syed Raza Ali Rizvi☺ (MS'10)and Shawn Xiong Wang, Using semantic and structural similarities for indexing and searching scientific papers, The Proc. of 10th IEEE International Conference on Computer Science and Automation Engineering, June 2011, Shanghai, China.
8. Syed Raza Ali Rizvi☺ and Shawn Xiong Wang, DT-Tree: A Semantic Representation of Scientific Papers, The Proc. of 10th IEEE International Conference on Computer and Information Technology, June 2010, Bradford, UK.
9. Justin Lee☺ (MS'05)and Xiong Wang, Pair-wise Sequence Analysis using Information Specific Algorithm, The Proc. of 6th IEEE International Conference on Computer and Information Technology, September 2006, Seoul, Korea.
10. Daniel K. Park☺ and Xiong Wang, Toward a General Framework for Microarray Data Comparison, The Proc. of 6th IEEE International Conference on Computer and Information Technology, September 2006, Seoul, Korea.
11. Ventzislav Tzvetkov☺ (MS'03)and Xiong Wang, DBXML - Connecting XML with Relational Databases, The Proc. of 5th IEEE International Conference on Computer and Information Technology, pp. 130 - 135, September 2005, Shanghai, China.
12. Yongming Tang, Xiong Wang, and Murat M. Tanik, Formalizing UML Activity Diagrams Using Concurrent Regular Expressions, The Proc. of 8th International Conference on Integrated Design and Process Technology, pp. 319 - 330, June 2005, Beijing, China.
13. Xiong Wang, Yongming Tang, and Bita Behnam☺ (MS'03), Component-Based Software Integration Using Colored Petri Net, The Proc. of 8th International Conference on Integrated Design and Process Technology, pp. 520 - 525, June 2005, Beijing, China.

Recent Professional Services

1. Program Chair of The 3rdInternational Conference on Information and Computer Technologies (ICICT), 2020
2. Program Chair of The 4th International Conference on Compute and Data Analysis (iccda), 2020.
3. Keynote Speaker of The 2ndInternational Conference on Information and Computer Technologies (ICICT), 2019
4. Keynote Speaker of The 3rd International Conference on Compute and Data Analysis (iccda), 2019.
5. Reviewer for International Journal of High Performance Computing and Networking, by Inderscience Publishers
6. Program committee member of The IEEE 8th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON-2017)
7. Program committee member of The IEEE 16th International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom-2017)
8. Reviewer for International Journal of Computer Aided Engineering and Technology, by Inderscience Publishers
9. General Chair and Proceeding Editor of The 2nd Annual International Conference on Computer Science and Mechanical Automation, 2016.
10. Reviewer for International Journal of Services Technology and Management, by Inderscience Publishers
11. Program committee member of The IEEE 7th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON-2016)
12. Reviewer for International Journal of Data Analysis Techniques and Strategies, by Inderscience Publishers
13. Program committee member of The IEEE 13th International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom-2014)
14. Reviewer for International Journal of Bio-inspired Computation, by Inderscience Publishers
15. Reviewer for International Journal of Big Data Intelligence, by Inderscience Publishers
16. Program committee member of The IEEE 13th International Conference on Computer and Information Technology (CIT'13)
17. Program committee member of The IEEE 12th International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom-2013)
18. Reviewer for International Journal of Computational Vision and Robotics, by Inderscience Publishers
19. Reviewer for International Journal of Computational Bioscience, by ACTA Press/IASTED
20. Program committee member of The IEEE 11th International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom-2012)
21. Program committee member of The IEEE 11th International Conference on Computer and Information Technology (CIT'11)

22. Reviewer for International Journal of Computational Science and Engineering, by Inderscience Publishers
23. Reviewer for IEEE IT Professional
24. Reviewer for IEEE Transactions on Education
25. Program committee member of The IEEE 10th International Conference on Computer and Information Technology (CIT'10)
26. Program committee member of The 4th International Conference on Complex, Intelligent and Software Intensive Systems (CISIS'10)

Recent Committee Services at CSUF

1. Academic Senate Miscellaneous Committee: Outstanding Professor Committee, Fall 2020 - Spring 2022
2. Academic Senate General Committee: Professional Leave Committee, 2020 - 2023
3. Undergraduate Program Coordinator, Fall 2018 - Spring 2022
4. Curriculum Committee (ECS College), Fall 2018 - Spring 2020
5. Department Personnel Committee, 2019 - 2020
6. Academic Senate General Committee: Professional Leave Committee, 2018 - 2020
7. Graduate Program Coordinator, Fall 2016 - Spring 2018
8. Academic Senate Member, 2015 - 2017
9. Academic Senate General Committee: Professional Leave Committee, 2015 - 2017
10. Academic Senate Standing Committee: Faculty Development Center Board, 2015 - 2017
11. Chair, Department of Computer Science, 2012 - 2015
12. Academic Senate General Committee: Faculty Research Committee, 2011 - 2013
13. Graduate Program Advisor, 2011 - 2012
14. Instructional Resources Committee, 2011 - 2012
15. Vice Chair, Department of Computer Science, 2009 - 2012
16. Academic Senate General Committee: Professional Leave Committee, 2008 - 2011
17. Academic Senate Standing Committee: Graduate Education Committee, 2007 - 2011

Kevin A. Wortman

Department of Computer Science
California State University, Fullerton
800 N. State College Blvd.
Fullerton, CA 92831

Email: kwortman@fullerton.edu
Office: CS-536
Phone: 657-278-2968

Education

University of California, Irvine, Ph.D., Information and Computer Science, 2009
Advisor: David Eppstein

University of California, Irvine, M.S., Information and Computer Science, 2004
Concentration: Algorithms and Data Structures

University of Massachusetts, Amherst, B.S., *cum laude*, 2002
Majors: Computer Science, Mathematics

Academic Employment

Associate Professor, Department of Computer Science, CSU Fullerton, 2015 – present

Assistant Professor, Department of Computer Science, CSU Fullerton, 2009 – 2015

Research Assistant, Department of Computer Science, UC Irvine, under David Eppstein, Fall 2008

Teaching Assistant, Donald Bren School of Info. and Computer Sciences, UC Irvine, 2003–2005

Summer Research Staff, MIT Lincoln Laboratory, Lexington, Massachusetts, Summer 2002

Undergraduate Research Assistant, Laboratory for Advanced Software Engineering Research, Amherst, Massachusetts, June 2000 to December 2001

Industry Employment

Engineering Co-Op, Unisys, Mission Viejo, California, 2008–2009

Engineering Intern, Google, Mountain View, California, 2005–2007

Intern, Tektronix, Chelmsford, Massachusetts, 1997–1999

Publications

Invited Journal Articles (peer reviewed)

I-1. J. Augustine, D. Eppstein and K. A. Wortman, *Approximate Weighted Farthest Neighbors and Minimum Dilation Stars,* Discrete Mathematics, Algorithms and Applications (DMAA), v. 2, i. 4, pp. 553-565, DOI: 10.1142/S1793830910000887 2010, 2010. Preliminary version listed as C-4.

I-2. D. Eppstein and K. A. Wortman, *Minimum Dilation Stars,* Computational Geometry: Theory and Applications, v. 37, i. 1, pp. 27-37, 2007. Preliminary version listed as C-7.

Journal Articles (peer reviewed)

J-1. D. Eppstein and K. A. Wortman, *Optimal Angular Resolution for Face-Symmetric Drawings*, J. Graph Algorithms and Applications (JGAA), v. 15, i. 4, pp. 551-564, 2011.

Conference Proceedings (peer reviewed)

C-1. K. A. Wortman and Nicholas Smith, *CombinoChord: A Guitar Chord Generator App,* IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC 2021), Las Vegas, Nevada, 2021.

C-2. Shekhar Palit and K. A. Wortman, *Perfect Tabular Hashing in Pseudolinear Time,* IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC 2021), Las Vegas, Nevada, 2021.

C-3. Coleman Nugent and K. A. Wortman, *Crumple Trees,* IEEE 10th Annual Computing and Communication Workshop and Conference (CCWC 2020), Las Vegas, Nevada, 2020.

C-4. J.R. Richardson and K. A. Wortman, *Street Scanner Geo-Location,* 21st Intelligent Transport Systems World Congress (IST 2014), Detroit, Michigan, 2014.

C-5. P. Danaee, K. A. Wortman, S. X. Wang, *Pseudoknotted RNA Secondary Structure Detection Using Artificial Neural Network,* 9th International Symposium on Bioinformatics Research and Applications (ISBRA 2013), Charlotte, North Carolina, 2013.

C-6. J. M. White and K. A. Wortman, *Divide-and-Conquer 3D Convex Hulls on the GPU,* 24th Canadian Conference on Computational Geometry (CCCG 2012), Prince Edward Island, Canada, 2012, pp. 137-142.

C-7. J. Augustine, D. Eppstein and K. A. Wortman, *Approximate Weighted Farthest Neighbors and Minimum Dilation Stars*, 16th International Computing and Combinatorics Conference (COCOON 2010), Nha Trang, Vietnam. Final version listed as I-1.

C-8. M. Dickerson, D. Eppstein and K. A. Wortman, *Dilation, Smoothed Distance, and Minimization Diagrams of Convex Functions,* 7th Int. Symp. Voronoi Diagrams in Science and Engineering (ISVD 2010), Quebec City, Canada, pp. 13-22.

C-9. D. Eppstein and K. A. Wortman, *Optimal Embedding Into Star Metrics,* Algorithms and Data Structures Symposium (WADS), Banff, Canada (best paper co-award). Lecture Notes in Comp. Sci. 5664, 2009, pp. 290-301.

C-10. D. Eppstein and K. A. Wortman, *Minimum Dilation Stars*, ACM Symposium on Computational Geometry (SoCG), Pisa, Italy, 2005, pp. 321-326. Final version listed as I-2.

Standards Documents (peer reviewed)

S-1. K. A. Wortman and J. Cowan, *SRFI 134: Immutable Deques*, Scheme Requests for Implementation, 2016, https://srfi.schemers.org/srfi-134/

Poster Presentations (peer reviewed)

P-1. K. Torres and K. A. Wortman, *The Hills are Designed with the Sound of Music*, CSUF ECS Student Projects Showcase and Awards, 2019.

P-2. J. Clay and K. A. Wortman, *A Durable Flash Memory Search Tree*, 3rd International Conference on Computational Sustainability (CompSust'12), Copenhagen, Denmark, 2012.

Teaching

Courses Taught — CSU Fullerton

Term	120	131	223C	254	305	335	439	452	481	484	535	597
Fall 2021		✓									✓	
Spring 2021						✓	✓					
Fall 2020		✓									✓	
Spring 2020	✓									✓		
Fall 2019	✓										✓	
Summer 2019						✓						
Spring 2019						✓				✓	✓	
Fall 2018	✓				✓	✓						
Summer 2018						✓						
Spring 2018						✓				✓		
Fall 2017					✓	✓						
Summer 2017								✓				
Fall 2016		✓					✓					
Spring 2016		✓								✓		
Fall 2015		✓					✓					
Summer 2015						✓						
Spring 2015			✓			✓						
Fall 2014						✓	✓					
Summer 2014						✓						
Spring 2014						✓						
Fall 2013		✓							✓			
Summer 2013						✓						
Spring 2013		✓				✓						
Fall 2012	✓											
Summer 2012						✓		✓				
Spring 2012	✓					✓	✓					
Fall 2011	✓											✓
Summer 2011						✓						
Spring 2011	✓			✓		✓						
Fall 2010	✓											
Summer 2010						✓						
Spring 2010	✓			✓		✓						
Fall 2009	✓					✓						

Courses Developed

1. CPSC 535 Advanced Algorithms, first offered Spring 2019
2. CPSC 305 Coding For Artists, first offered Fall 2017
3. CPSC 223C C Programming, first offered Spring 2015
4. CPSC 439 Theory of Computation, first offered Fall 2014
5. CPSC 223P Python Programming, co-proposer, first offered Fall 2012

Teaching Assistant Experience — UC Irvine

1. Fall 2005: Honors Intro. to CS I (H21)
2. Spring 2004: Honors Intro. to CS III (H23)
3. Winter 2004: Honors Intro. to CS II (H22)
4. Fall 2003: Formal Languages and Automata (162)
5. Spring 2003: Engineering Data Structures (160E)
6. Winter 2003: Honors Intro. to CS III (H23)

Advising

Masters Theses Advised

1. Mohammed Alfraihi, *Improving the Standard Ant Clustering Algorithm Using Genetic Algorithms*, Fall 2013
2. Hussein Altabrawee, *3D Convex Hull Algorithms in the MapReduce Model (tentative title)*, Fall 2013
3. Brian Croner, *Offline Intelligent Lossless Compression of Hyperlinked Documents*, Spring 2012
4. James Clay, *An Efficient Multi-Level Flash Data Structure*, Fall 2011
5. Mihai Marinescu, *Wear-Resistant Flash Hash Tables*, Fall 2011
6. David Luu, *Numerical Methods in Prime Factorization: To Find or not to Find a Prime*, Summer 2010

Masters Projects Advised

1. Elizabeth Tsan, *Radically Different*, Fall 2019
2. Swati Swahoo, *Private Cloud Computing*, Summer 2019
3. Nishant Rathi, *Code Runner*, Spring 2018
4. Dana Toribio, *Curriculum Graph Visualizer*, Spring 2016
5. Gary Tse, *Graphics Software Tool Plugin based on Skeleton Extraction from a Closed Polygon Mesh*, Spring 2016
6. Colin Poan, *Creating an OLAP Data Warehouse from a Real-World OLTP Database in Order to Increase Data Extract Performance*, Fall 2015
7. Nicholas Smith, *CombinoChord: A Guitar Chord Generator App*, Fall 2015
8. Rodrigo Bryan Gonzalez Sr., *CryptoLock*, Fall 2014
9. John Saxton, *Automated C++ Grading Application*, Spring 2014
10. Yasaman Shahmohammad, *Computational Geometry Algorithms for 3D Printing Applications (tentative title)*, Spring 2014
11. Yousef Aloumi, *Arabic Optical Character Recognition Mobile Application*, Fall 2013
12. Toan Nguyen, *Street Scanner Phase 1*, Fall 2013

13. Paul Parker, *Compress Wikipedia: Text Compression Optimizations via the Christophides Approximation Algorithm for the Travelling Salesman Problem,* Spring 2013
14. Leon Smith II, *Medical SMS Expert System,* Spring 2013
15. Brenda Griffith, *A Developer's Checklist for White Box Testing: A Human Factors Perspective,* Spring 2012
16. Alejandro Alvarenga, *Design and Implementation of a Secure Role Access Control Web Based Healthcare Credentialing Tracking System for the Cal State Fullerton Health Center,* Fall 2011
17. Aseel Ashoor, *C++ Parallel Skip List Implementation,* Fall 2011
18. Brian Badal, *Automated Data Extraction From Remote Database,* Fall 2011
19. Arunkumar Chandrasekaran, *Implement a Dynamic Programming Algorithm for Matrix Chain Multiplication Using MapReduce,* Fall 2011
20. Dena Fitzgerald, *Baby Record iPhone Application,* Fall 2011
21. Christa McCarthy, *Neural Networks as a Blog Comment Spam Filter,* Fall 2011
22. Jaydeep Patel, *Hybrid Classifier: A Clustered Decision Tree,* Fall 2011
23. Bhavana Sudharshan, *A Demonstration of the "Categorization of Web Documents Using Extraction Ontologies" Approach for Mobile Phones Application Domain,* Fall 2011

Funding

Funded Awards

1. *Street Scanner,* Raytheon Company, PI, 2013, $25,000.
2. *Funding My Research: A Grant Writing Series,* 2012, $1,000.
3. *Promoting Undergraduate Research Experiences (PURE) Grant Program,* 2011, $1,000.

Unfunded Proposals

1. *Enhanced Programming Curriculum for the Retention of Computer Science and Computer Engineering Students,* Association of American Colleges & Universities, co-PI, 2014.
2. *Ensuring Student Success in Engineering and Computer Science (ESSECS),* National Science Foundation, co-PI, 2012.
3. *Proposal for Development of a CCOS Archive,* Central California Ozone Study, PI, 2011.
4. *Signal and Image Processing,* IEEE Real-World Engineering Projects (RWEP), co-PI, 2010.

Service

University-Level

1. Academic Master Plan Committee: AY 2015-2016

2. General Education Committee: AY 2016-2017, 2015-2016
3. General Education Task Force: AY 2019-2020, 2018-2019, 2017-2018
4. Promoting Undergraduate Research Experiences Committee (PURE): AY 2010-2011
5. SafeSpace Ally, CSU Fullerton Multicultural Leadership Center: 2009-present
6. Supplemental Instruction (SI) Department Liason: AY 2016-2017, 2015-2016, 2014-2015, 2013-2014

College of Engineering and Computer Science

1. Ad-Hoc Committee: AY 2017-2018
2. Commencement Committee: AY 2012-2013, 2011-2012, 2010-2011, 2009-2010
3. Curriculum Committee: AY 2017-2018, 2016-2017, 2015-2016

Department of Computer Science

1. ACM Student Chapter Advisor: AY 2014-2015, 2013-2014, 2012-2011, 2011-2012
2. Assessment Committee: AY 2021-2022 (chair), 2020-2021, 2018-2019, 2017-2018
3. Chair Election Committee Chair: AY 2011-2012
4. Graduate Program Committee: AY 2015-2016, 2014-2015
5. Executive Committee: AY 2012-2013, 2010-2011
6. Personnel Committee: AY 2016-2017, 2015-2016
7. Selection (Faculty Search) Committee: AY 2015-2016, 2014-2015, 2013-2014
8. Undergraduate Program Coordinator: AY 2017-2018, 2016-2017, 2015-2016, 2014-2015
9. Undergraduate Program Committee: AY 2021-2022, 2018-2019, 2017-2018, 2016-2017, 2015-2016, 2014-2015, 2013-2014, 2012-2013, 2011-2012, 2010-2011, 2009-2010

Workshops and Roundtables

1. *Issues in Educating Veteran Engineers: A Multi-Institution Workshop Exploring Best Practices in Educating Veterans*, University of San Diego, June 15, 2010
2. *Department of Defense Roundtable: A Hispanic Engineering, Science, and Technology Week (HESTEC) 2009 Activity*, University of Texas Pan-American, September 29, 2009

Media Coverage

1. Orange County Register, Animation opens pathway for CSUF computer science grad to blend science, art, April 16, 2020
2. Orange County Register, CSUF computer science grad says her goal is to make technology secure, April 16, 2020
3. Orange County Register, Titan Voice: Computer science student inspires next generation of tech women, December 5, 2018

4. The Pollak Library Blog, Dr. Wortman's top resources for trends in Computer Science, invited guest post, December 2, 2010

Reviewer, CCWC 2021, CCWC 2020, SIGCSE 2020, 2013 ACM-ICPC North America Qualifier Contest, *Open Data Structures* (textbook), IEEE Transactions on Education

External Reviewer, Scheme R7RS Working Group 2, J. Algorithms, ACM TALG, ISAAC 2008

Associated Graduate Students, UC Irvine, Council Representative, School of Information and Computer Science, AY 2004-2005 and AY 2006-2007

Awards

Best Software, CSUF ECS Student Projects Showcase and Awards, for poster P- 1, sponsored by Raytheon, 2019

Faculty Advisor of Distinction, CSU Fullerton, March 2018

Faculty Recognition: Outstanding Teaching, CSU Fullerton, March 2014

Faculty Recognition: Scholarly & Creative Activity, CSU Fullerton, March 2013

Outstanding Educator of the Year (College of ECS), Associated Students Inc., AY 2012-2013

Carol Barnes Excellence in Teaching Award Nominee, February 2011

Faculty Recognition: Scholarly & Creative Activity, CSU Fullerton, April 2010

Best Paper Award, Algorithms and Data Structures Symposium (WADS) 2009, for *Optimal embedding into star metrics;* Sponsored by Springer Verlag

Graduate Assistance In Areas Of National Need (GAANN) Fellow, 2004-2005 academic year

UMass Amherst Computer Science Talent Advancement Program, 1998-1999 academic year

Affiliations

Association of Computing Machinery (ACM)

Technical Skills

Programming Languages

- Expert: C++, LaTeX, Python, Scheme
- Proficient: C, C#, Haskell, Java
- Familiar: BASIC, Bash, Common Lisp, Eiffel, F#, i386 Assembly, Javascript, OpenCL, Reason

ML, Rust, Z80 Assembly

E. Resources

Table 10. Financial Resources

Academic Year	OE&E Allocation (baseline funds) - STATE SUPPORT	UEE Allocation (approximate) - SELF SUPPORT	Equipment/Lab Allocation (approximate) - STATE SUPPORT	Misc Course Fees Allocation - STATE SUPPORT
2016-17	31,000	62,428	6,083	30,532
2017-18	25,000	24,555	-	17,806
2018-19	25,000	16,499	274,106	23,941
2019-20	30,800	20,000	-	27,000
2020-21	24,000	-	-	27,090
Total	**135,800**	**123,482**	**280,189**	**126,369**
Grand Total	**665,840**			