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Professor of Computer Science  
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## Objective

Research and teaching in the areas of computer science with emphasis on embedded systems.

## Education

- Ph.D., Computer Science, UCR, 2001, Thesis: *System-Level Exploration for Pareto-Optimal Configurations in Parameterized System-on-a-Chip*, Received Best Thesis Award.
- B.S., Computer Science, UCR, 1997, Graduated Cum Laude.

## Position

- Chair, Department of Computer Science, University of California, Irvine, 2021-present.
- Professor, Department of Computer Science, University of California, Irvine, 2011-present.
- Vice Chair, Department of Computer Science, University of California, Irvine, 2018-2021.
- Associate Dean for Student Affairs, School of Information & Computer Sciences, University of California, Irvine, 2011-2016.
- Associate Professor, Department of Computer Science, University of California, Irvine, 2007-2011.
- Assistant Professor, Department of Computer Science, University of California, Irvine, 2001-2007.

## Member

- Institute of Electrical and Electronics Engineers (IEEE), Senior Member.
- Association for Computing Machinery (ACM).

## Service

### Editorial Board

- Editorial Board Member, Journal of Life & Environmental Sciences (PeerJ), Computer Science, 2023-present.
- Guest Editor, International Journal of Parallel Programming (IJPP), 2022, 2023.
- Associate Editor, Computer Science & Engineering section of Electronics, 2019-2021.
- Associate Editor, ACM Transactions on Embedded Computing Systems (TECS), 2008-2014.
- Online Editor, Odysci, 2010-2011.

- Associate Editor, ACM SIGDA Bimonthly Newsletter, 2005-2007.
- Guest Editor, International Journal of Parallel Programming (IJPP), 2006, 2007.
- Associate Editor, Journal of Embedded Computing (JEC), 2004-2006.

## **Distinguished Service**

- Tutorial & Special Session Member, International Conference on Computer Aided Design (ICCAD), 2019-2023.
- Industrial Sponsorship Co-Chair for the ACM International Conference on Computing Frontiers (CF), 2021.
- Executive Committee Member, ACM Special Interest Group on Design Automation (SIGDA), 2009-2011.
- Technical Program Committee Co-Chair, International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2010.
- Technical Program Committee Co-Chair, IFIP Workshop on Software Technologies for Future Embedded & Ubiquitous Systems (SEUS), 2008.
- Technical Program Committee Chair, Special Interest Group on Design Automation (SIGDA) Ph.D. Forum at Design Automation Conference, 2007.
- Technical Program Committee Co-Chair, Special Interest Group on Design Automation (SIGDA) Technical Committee on System Design, 2006.
- Technical Program Committee Co-Chair, Special Interest Group on Design Automation (SIGDA) Ph.D. Forum at Design Automation Conference, 2006.
- Special Sessions Chair, International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2005.

## **Technical Program Committee Member**

- International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2022.
- Design Automation Conference (DAC), 2022.
- Design Automation Conference (DAC), 2020.
- International Conference on Computer Aided Design (ICCAD), 2018-2020.
- International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2003-2020.
- ACM Great Lakes Symposium on VLSI (GLSVLSI), 2018.
- Design Automation Conference (DAC), 2017.
- Non-Volatile Memory Systems and Applications Symposium (NVMSA), 2017.
- Design, Automation and Test in Europe Conference (DATE), 2016-2018.
- IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2013.
- IEEE Symposium on Embedded Systems for Real-Time Multimedia (ESTIMedia), 2012-2017.

- Design Automation Conference (DAC), 2012-2014.
- ACM Student Research Competition at DAC, 2010.
- International Conference on Embedded Software and Systems (ICCESS), 2008.
- International Symposium on Low Power Electronics and Design (ISLPED), 2007-2011.
- International Workshop on Embedded Single and Multicore Systems on Chips (MCSoc), 2007.
- International Workshop on Embedded Software Optimization (ESO), 2006.
- International Workshop on SoC and MCSoc Design (SoC), 2006.
- International Workshop on Embedded Computing (EC), 2006.
- International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES), 2005, 2009-2011.
- Special Interest Group on Design Automation (SIGDA) Ph.D. Forum at Design Automation Conference (DAC), 2005-2008.
- International Conference on Embedded And Ubiquitous Computing (EUC), 2005.
- International Workshop on Logic and Synthesis (IWLS), 2004-2006.
- International Conference on Computer Aided Design (ICCAD), 2003-2005, 2010-2011.
- Asia and South Pacific Design Automation Conference (ASP-DAC), 2003.
- International Workshop on Embedded System Codesign (ESCODES), 2002.

### **Topic Chair**

- Embedded Software: International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2014.
- Embedded Software: International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2013.
- Embedded Software: International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2006.
- Micro-Architecture and Memory Optimizations: International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2005.
- Micro-Architecture and Memory Optimizations: International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2004.

### **Session Chair**

- Asia and South Pacific Design Automation Conference (ASP-DAC), 2021.
- International Conference on Computer Aided Design (ICCAD), 2017.
- International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2009.
- International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES), 2009.

- Design Automation Conference (DAC), 2009.
- Design Automation and Test in Europe (DATE), 2008.
- Design Automation Conference (DAC), 2007.
- International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2005.
- International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES), 2005.
- International Conference on Computer Aided Design (ICCAD), 2005.
- International Symposium on Low Power Electronics and Design (ISLPED), 2005.
- International Conference on Computer Aided Design (ICCAD), 2004.
- International Conference on Computer Aided Design (ICCAD), 2003.
- International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2002.
- International Workshop on Embedded System Codesign (ESCODES), 2002.
- International Conference on Computer Aided Design (ICCAD), 2001.

## Conference Organizer

- Reviewer, International Conference on Computer Aided Design (ICCAD), Special Sessions and Tutorial, 2019, 2020.
- Finance Chair, Embedded Systems Week (ESWEEK), 2008.
- Finance Chair, International Symposium on Low Power Electronics and Design (ISLPED), 2007.
- Student Travel Grants Chair, International Conference on Supercomputing (ICS), 2006.
- Web Chair, International Symposium on Low Power Electronics and Design (ISLPED), 2006.
- Audio Visual Chair, International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2006.
- Finance Chair, Special Interest Group on Design Automation (SIGDA) Ph.D. Forum at Design Automation Conference (DAC), 2005.
- Publicity Chair, International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2004.
- Poster Committee Chair, Southern California Embedded Systems Symposium (SCESS), 2003.
- Local Chair and Treasurer, International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), 2003.
- Local Chair, International Workshop on Languages, Compilers, and Tools for Embedded Systems (LCTES), 2003.
- Finance and Registration Co-Chair, International Symposium on High Performance Computer Architecture (HPCA), 2003.

## Reviewer & Panelist

- External reviewer for Chapman University's Computer Science, Data Analytics, and Software Engineering programs (multi-day site visit, delivery of assessment summaries for each program, exit meeting with Dean & Provost, delivery of a comprehensive final report), October 2019.
- National Science Foundation (NSF).
- Kentucky Science & Engineering Foundation (KSEF).
- University of California Microelectronics Innovation and Computer Research Opportunities (UC-MICRO).
- Council of Physical Sciences of the Netherlands Organization for Scientific Research (NWO).
- IEEE Computer.
- IEEE Transactions on Computers (TC).
- IEEE Transactions on Computer Aided Design (TCAD).
- IEEE Transactions on Very Large Scale Integration Systems (TVLSI).
- IEEE Transactions on Design & Test of Computers (TD&T).
- IEEE Transactions on Circuits and Systems II (TCAS-II).
- ACM Transactions on Embedded Computing Systems (TECS).
- ACM Transactions on Design Automation of Electronic Systems (TODAES).
- IEE Proceedings - Computers and Digital Techniques (IEE-C&DT).
- Springer Design Automation for Embedded Systems (SDAES).
- Cluwer Design Automation for Embedded Systems (CDAES).
- Elsevier Journal of Microprocessors and Microsystems (MICPRO).
- Elsevier Journal of System Architecture (JSA).
- Asia and South Pacific Design Automation Conference (ASP-DAC).
- Design Automation Conference (DAC).
- International Conference on Computer Aided Design (ICCAD).
- International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS).
- International Symposium on Micro-architecture (MICRO).
- International Workshop on Compilers, Architecture, and Synthesis for Embedded Systems (CASES).
- International Workshop on Logic and Synthesis (IWLS).

## University

- Member, University Committee on Computing and Communications (UCCC), 2007-2010.

## Campus

- Faculty Advisor, Society of Women Engineers (SWE) 2015-2017.
- Member, Council on Enrollment and Student Success, 2015-2016.
- Member, Graduate Professional Development and Career Outcomes Task Force, 2013-2014.
- Member, Council on Research, Computing and Library Resources (CORCLR), 2007-2010.
- Chair, Faculty Board for Undecided/Undeclared Students: A Board of the Council on Educational Policy, 2003-2007.

## School

- Chair, Department of Computer Science, 2021-present.
- Ex Officio Member, CS Steering Committee, 2020-2021.
- Chair, Ad Hoc Merit Review (1 case), 2020-2021.
- Member, Ad Hoc Merit Review (1 case), 2020-2021.
- Chair, Professor of Teaching Hiring Committee, 2020-2021.
- Chair, Ad Hoc Merit Review (4 cases), 2019-2020.
- Member, Ad Hoc Merit Review (3 cases), 2019-2020.
- Ex Officio Member, CS&E Steering Committee, 2018-2021.
- Vice Chair, CS Undergraduate Affairs, 2018-2021.
- Chair, Part-Time Hiring Committee, 2018-2019.
- Chair, Full-Time Lecturer Hiring Committee, 2018-2019.
- Member, Professor of Teaching Hiring Committee, 2018-2019.
- Member, CS Hiring Vision Committee, 2017-2018.
- Member, ICS Executive Committee, 2017-2018.
- Associate Dean, ICS Student Affairs, 2011-2016.
- Ex Officio Member, Graduate Policy Committee, Undergraduate Policy Committee, CSE Steering Committee, CGS Steering Committee, 2011-2016.
- Chair, ICS Enrollment Growth Task Force, 2014.
- Chair, ICS Strategic Planning: Graduate Education Group, 2011-2012.
- Member, Task Force on ICS First Year Curriculum, 2010-2011.
- Chair, Task Force on the CS Major, 2010-2011.
- Member, Computer Science Chair Recommendation Committee, 2009-2010.
- Chair, Computing & Network Policy, 2009-2010.
- Member, Computing & Network Policy, 2008-2009.

- Member, CS&E Steering Committee, 2003-2006.
- Member, DARPA Grand Challenge Team eXtreme Anteater Racers (XAR) Group, 2004-2005.
- Member, Entrepreneurship Committee, 2004-2005.
- Member, Executive Committee, 2003-2004.
- Member, Transition Committee, 2003-2004.
- Member, Faculty Recruit Committee (Ubiquitous Computing), 2003-2004.
- Member, Faculty Recruit Committee (Embedded Systems), 2002-2003.
- Member, CS Degree Program Committee, 2002-2003.
- Member, Graduate Recruit & Admissions Committee, 2002-2003.
- Member, CS&E Degree Program Committee, 2001-2002.

## Awards

- Best Paper Candidate, Design Automation and Test in Europe (DATE), 2021.
- UC Irvine PHAI Academic Initiative Research Seed Grant, “Early Detection of New Respiratory Diseases,” \$30K, 2021.
- Best Paper Candidate, Asian and South Pacific Design Automation Conference (ASP-DAC), 2021.
- ICS Research Award, “Computational Storage for Exceptionally Large Artificial Neural Network Acceleration,” \$75K, 2020.
- UCI Innovator Awards, Entrepreneurial Leader Nominee, 2019.
- UCI Innovator Awards, Entrepreneurial Leader Nominee, 2018.
- NSF Grant (#1563652), National Science Foundation, \$1.0M, 2016.
- A. Richard Newton Young Student Advisor Award, The Design Automation Conference, San Francisco, 2015.
- NSF Grant (#1136146), National Science Foundation, \$1.5M, 2011.
- ASEE ECE Division Hewlett-Packard Frederick Emmons Terman Award, 2011.
- NSF Grant (#1016789), National Science Foundation, \$200K, 2010.
- ICS Dean’s Award for Excellence in Undergraduate Teaching, University of California, Irvine, 2010.
- NSF Grant (#0837124), National Science Foundation, \$70K, 2009.
- Best Paper, International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES), 2008.
- Research & Travel Award, Council on Research, Computing, and Library Resources (CORCLR), University of California, Irvine, 2007.
- NSF Grant (#0749508), National Science Foundation, \$200K, 2007.
- Faculty Desktop Computing Initiative Award, University of California, Irvine, 2007.

- SIGDA Technical Leadership Award, American Computing Machinery (ACM), 2007.
- Best Paper, American Control Conference (ACC), 2006.
- Best Paper, ACM Transactions on Design Automation of Electronic Systems (TODAES), 2006.
- Research & Travel Award, Council on Research, Computing, and Library Resources (CORCLR), University of California, Irvine, 2005.
- Collaborative Research Initiation Award (CRIA), School of Information and Computer Sciences, University of California, Irvine, 2005.
- Chancellor's Award for Excellence in Fostering Undergraduate Research, University of California, Irvine, 2005.
- Research & Travel Grant, School of Information and Computer Sciences, University of California, Irvine, 2004.
- Ted & Janice Smith Faculty Seed Funding Award, 2004.
- Discovery Grant, University of California, 2003.
- Research Grant, Microsoft Corporation & University of California MICRO Matching Funds, 2003.
- Excellence in Teaching Award, Instructional Resource Center/Division of Undergraduate Education, University of California, Irvine, 2003.
- Research & Travel Grant, School of Information and Computer Science, University of California, Irvine, 2003.
- Equipment Donation, Xilinx University Program, 2002.
- NSF ITR Grant, National Science Foundation, 2002.
- Research & Travel Grant, School of Information and Computer Sciences, University of California, Irvine, 2002.
- Equipment Donation, Xilinx University Program, 2001.
- Outstanding Ph.D. Thesis, Department of Computer Science & Engineering, University of California, Riverside, 2001.
- Best Paper, Design Automation and Test in Europe (DATE), 2000.
- GAANN Fellowship, Department of Computer Science & Engineering, University of California, Riverside, 1998.
- Graduate Scholarship, Design Automation Conference, 1998.
- Scholarship, International Council on Systems Engineering Inland Empire, 1997.
- MICRO Fellowship, Department of Computer Science & Engineering, University of California, Riverside, 1997.
- Outstanding Student Award, College of Engineering, University of California, Riverside, 1997.
- Outstanding Academic Program Excellence, Honors Convocations, University of California, Riverside, 1997.



## Presentations

### Invited Talks

- Gravity: An Artificial Neural Network Compiler for Embedded Applications. University of California, Riverside, 12/7/2020.
- ESL Design: Why the Time is Right and What are the Key Enabling Technologies. IEEE International Conference on Computer Aided Design (ICCAD) 2005.
- New Developments in Embedded System Design: Software for Embedded System. IEEE International Conference on Computer Design (ICCD) 2005.

## Patents

### Issued

- P.13** T. Givargis. Storage Device Embedded Strand Architecture. United States Patent, 10,558,567, February 11, 2020.
- P.12** T. Givargis. Tree Structure Serialization and Deserialization Systems and Methods. United States Patent, 10,216,627, February 26, 2019.
- P.11** T. Givargis, R. Sadri. Methods for Optimizing Data Movement in Solid State Devices. United States Patent, 8,612,719, December 2013.
- P.10** T. Givargis. Systems and Methods for Managing Key-Value Stores. United States Patent, 8,612,402, December 2013.
- P.9** A. Nacul, T. Givargis. Phantom Serializing Compiler and Method of Operation of Same. United States Patent, 7,886,283, February 2011.
- P.8** J. Addink, S. Addink, T. Givargis. Methods and Apparatus for Using Water Use Signatures and Water Pressure in Improving Water Use Efficiency. United States Patent 7,330,796, February 2008.
- P.7** J. Addink, S. Addink, T. Givargis. Methods and Apparatus for Using Water use Signatures in Improving Water use Efficiency. United States Patent 6,963,808, November 2005.
- P.6** J. Addink, T. Givargis. Interactive Irrigation System. United States Patent 6,950,728, September 2005.
- P.5** J. Addink, K. Buhler, T. Givargis. Modifying Irrigation Schedules of Existing Irrigation Controllers. United States Patent 6,892,114, May 2005.
- P.4** J. Henkel, T. Givargis, F. Vahid. Method for Core-Based System-Level Power Modeling using Object-Oriented Techniques. United States Patent 6,865,526, March 2005.
- P.3** K. Buhler, T. Givargis. Two Tire Irrigation Valve Controller. United States Patent 6,812,826, November 2004.
- P.2** J. Addink, T. Givargis. Detecting Weather Sensor Malfunctions. United States Patent 6,714,134, March 2004.
- P.1** J. Addink, K. Buhler, T. Givargis. Irrigation Accumulation Controller. United States Patent 6,298,285, October 2001.

# Publications

## Book

- B4.** S. Peter, T. Givargis. Generation and Verification of Timing Attack Resilient Schedules During the High-Level Synthesis of Integrated Circuits. Book Chapter in Behavioral Synthesis for Hardware Security, Springer, ISBN: 978-3-030-78840-7, 2022.
- B3.** F. Vahid, T. Givargis. Programming Embedded Systems - An Introduction to Time-Oriented Programming. UniWorld Publishing, ISBN: 978-0-9829626-4-0, 2012.
- B2.** A. Nacul, M. Lajolo, T. Givargis. Interface-Centric Abstraction level for Rapid Hardware/Software Integration, Book Chapter in Applications of Specification and Design Languages for SOCs, Springer, ISBN: 1-4020-4997-8, 2006.
- B1.** F. Vahid, T. Givargis. Embedded System Design: A Unified Hardware/Software Introduction. John Wiley and Sons, ISBN: 0471386782, 2001.

## Journal

- J36.** M. Heddes, I. Nunes, P. Vergés, D. Kleyko, D. Abraham, T. Givargis, A. Nicolau, A. Veidenbaum. Torchhd: An Open Source Python Library to Support Research on Hyperdimensional Computing and Vector Symbolic Architectures. Journal of Machine Learning Research (JMLR), vol 24, pp. 1-10, June 2023..
- J35.** P. Poduval, H. Alimohamadi, A. Zakeri, F. Imani, M. Najafi, T. Givargis, M. Imani. GraphHD: Graph-Based Hyperdimensional Memorization for Brain-Like Cognitive Learning. Frontiers in Neuroscience, vol 16, pp. 1-20, February 2022.
- J34.** N. Watkinson, F. Zaitsev, A. Shivam, M. Demirev, M. Heddes, T. Givargis, A. Nicolau, A. Veidenbaum. EdgeAvatar: An Edge Computing System for Building Virtual Beings. Electronics, vol 10, no. 3(229), pp. 1-19, January 2021.
- J33.** M. Amir, T. Givargis. Pareto Optimal Design Space Exploration of Cyber-Physical Systems. Internet of Things (IoT), vol 12, no. 100308, pp. 1-13, December 2020.
- J32.** F. Vahid, T. Givargis, R. Lysecky. A Pattern Recognition Framework for Embedded Systems. The American Society for Engineering Education (ASEE) Computers in Education (CoED) Journal, vol 11, no. 1, pp. 1-13, March 2020.
- J31.** M. Amir, T. Givargis, F. Vahid. Switching Predictive Control Using Reconfigurable State-Based Model. ACM Transactions on Design Automation of Electronic Systems (TODAES), vol. 24, no. 1, pp. 1-21, November 2018.
- J30.** M. Amir, T. Givargis. Priority Neuron: A Resource-Aware Neural Network for Cyber-Physical Systems. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), pp. 1-11, DOI: 10.1109/TCAD.2018.2857319, September 2018.
- J29.** H. Buini, S. Peter, T. Givargis. Adaptive Embedded Control of Cyber-Physical Systems using Reinforcement Learning. IET Cyber-Physical Systems: Theory & Applications (IET), vol. 2, no. 3, pp. 127-135, June 2017.
- J28.** S. Peter, B. Reddy, F. Momtaz, T. Givargis. Design of Secure ECG-Based Biometric Authentication in Body Area Sensor Networks. Sensors, vol. 16, no. 4, pp. 570-591, April 2016.

- J27.** T. Springer, S. Peter, T. Givargis. Fuzzy Logic Based Adaptive Hierarchical Scheduling for Periodic Real-Time Tasks. *ACM Special Interest Group on Embedded Systems (SIGBED) Review*, vol. 13, no. 1, pp. 8-14, January 2016.
- J26.** S. Peter, T. Givargis. Component-Based Synthesis of Embedded Systems using Satisfiability Modulo Theories, *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, vol. 20, no. 4, pp. 49:1-49:27, September 2015.
- J25.** T. Springer, S. Peter, T. Givargis. Adaptive Resource Synchronization In Hierarchical Real-Time Systems. *ACM Special Interest Group on Embedded Systems (SIGBED) Review*, vol. 11, no. 4, pp. 37-42, December 2014.
- J24.** V. Gunes, S. Peter, T. Givargis, F. Vahid. A Survey on Concepts, Applications, and Challenges in Cyber-Physical Systems. *KSII Transactions on Internet and Information Systems (TIIS)*, vol. 8, no. 12, pp. 4242-4268, December 2014.
- J23.** B. Miller, F. Vahid, T. Givargis, P. Brisk. Graph-Based Approaches to Placement of Processing Element Networks on FPGAs for Physical Model Simulation. *ACM Transactions on Reconfigurable Technology and Systems (TRETTS)*, vol. 7, no. 4, article 10, December 2014.
- J22.** C. Huang, F. Vahid, T. Givargis. Automatic synthesis of physical system differential equation models to a custom network of general processing elements on FPGAs. *ACM Transactions on Embedded Computing Systems (TECS)*, vol 13, no. 2, article 23, September 2013.
- J21.** C. Huang, B. Miller, F. Vahid, T. Givargis. Synthesis of Networks of Custom Processing Elements for Real-Time Physical System Emulation. *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, vol. 18, no. 2, pp. 22-42, March 2013.
- J20.** C. Huang, F. Vahid, T. Givargis. A Custom FPGA Processor for Physical Model Ordinary Differential Equation Solving. *IEEE Embedded Systems Letters*, vol. 3, no. 4, pp. 113-116, September 2011.
- J19.** S. Choudhuri, T. Givargis. Deterministic Service Guarantees for NAND Flash using Partial Block Cleaning. *Academy Publisher Journal of Software (JSW)*, vol. 4, no. 7, pp. 728-737, September 2009.
- J18.** M.A. Ghodrat, T. Givargis, A. Nicolau. Optimizing Control Flow in Loops using Interval and Dependence Analysis. *Springer Journal on Design Automation of Embedded Systems (DAES)*, vol. 13, no. 3, pp. 193-221, September 2009.
- J17.** S. Sirowy, D. Sheldon, T. Givargis, F. Vahid. Virtual Microcontrollers. *ACM SIGBED Review*, vol. 6, no. 1, January 2009.
- J16.** A. Nacul, T. Givargis. Synthesis of Time-Constrained Multitasking Embedded Software. *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, vol. 11, no. 4, pp. 822-847, October 2006.
- J15.** M.A. Ghodrat, T. Givargis, A. Nicolau. Expression Equivalence Checking using Interval Analysis. *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, vol. 14, no. 8, pp. 830-842, August 2006.
- J14.** C.V. Lopes, A. Haghghat, A. Mandal, T. Givargis, P. Baldi. Localization of Off-the-Shelf Mobile Devices Using Audible Sound: Architectures, Protocols and Performance Assessment. *ACM Mobile Computing and Communications Review (MC2R)*, vol. 10, no. 2, pp. 38-50, April 2006.
- J13.** T. Givargis. Zero Cost Indexing for Improved Processor Cache Performance. *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, vol. 11, no. 1, pp. 3-25, January 2006. *2006 TODAES Best Paper Award.*

- J12.** T. Givargis, David Eppstein. Memory Reference Caching for Activity Reduction on Address Buses. Elsevier Journal of Microprocessors and Microsystems (MICPRO), vol. 29, no. 4, pp. 145-153, May 2005.
- J11.** A. Ghosh, T. Givargis. Cache Optimization for Embedded Processor Cores: An Analytical Approach. ACM Transactions on Design Automation of Electronic Systems (TODAES), vol. 9, no. 4, pp. 419-440, October 2004.
- J10.** A. Nacul, T. Givargis. Adaptive Cache Management for Low Power Embedded Systems. Korea Multimedia Society, Key Technology of Next Generation IT, ISSN 1229-778X, pp. 30-39, December 2003.
- J9.** T. Givargis, F. Vahid, J. Henkel. Instruction-Based System-Level Power Evaluation of System-on-a-Chip Peripheral Cores. IEEE Transactions on Very Large Scale Integration Systems (TVLSI), vol. 10, no. 6, pp. 856-863, December 2002.
- J8.** T. Givargis, F. Vahid, J. Henkel. System-Level Exploration for Pareto-Optimal Configurations in Parameterized System-on-a-Chip. IEEE Transactions on Very Large Scale Integration Systems (TVLSI), vol. 10, no. 4, pp. 416-422, December 2002.
- J7.** T. Givargis, F. Vahid. Platune: A Tuning Framework for System-on-a-Chip Platforms. IEEE Transactions on Computer Aided Design (TCAD), vol. 21, no. 11, pp. 1317-1327, November 2002.
- J6.** F. Vahid, T. Givargis, S. Cotterell. Power Estimator Development for Embedded System Memory Tuning. Journal of Circuits, Systems, and Computers (JCSC), vol. 11, no. 5, pp. 459-476, October 2002.
- J5.** T. Givargis, F. Vahid. Tuning of Cache Ways and Voltage for Low-Energy Embedded System Platforms. Springer Journal on Design Automation of Embedded Systems, vol. 7, issue 1-2, pp. 35-51, September 2002.
- J4.** T. Givargis, F. Vahid, J. Henkel. Evaluating Power Consumption of Parameterized Cache and Bus Architectures in System-on-a-Chip Designs. IEEE Transactions on Very Large Scale Integration Systems (TVLSI), vol. 9, no. 4, pp. 500-508, August 2001.
- J3.** F. Vahid, T. Givargis. Platform Tuning for Embedded Systems Design. IEEE Computer, vol. 34, no. 3, pp. 112-114, March 2001.
- J2.** J. Farrell, T. Givargis, M. Barth. Real-Time Differential Carrier Phase GPS-Aided INS. IEEE Transactions on Control Systems Technology (TCST), vol. 8, no. 4, pp. 709-721, July 2000.
- J1.** J. Farrell, T. Givargis. Differential GPS Reference Station Algorithm - Design and Analysis. IEEE Transactions on Control Systems Technology (TCST), vol. 8, no. 3, pp. 519-531, May 2000.

## Conference

- C81.** M. Heddes, I. Nunes, T. Givargis, A. Nicolau. Convolution and Cross-Correlation of Count Sketches Enables Fast Cardinality Estimation of Multi-Join Queries. ACM Special Interest Group on Management of Data (SIGMOD), to appear.
- C80.** P. Verges, T. Givargis, A. Nicolau. RefineHD: Accurate and Efficient Single-Pass Adaptive Learning Using Hyperdimensional Computing. IEEE International Conference on Rebooting Computing (ICRC), pp. 1-8, San Diego, 2023.

- C79.** P. Verges, I. Nunes, M. Heddes, T. Givargis, A. Nicolau. Accelerating The Permute And N-gram Operations For Hyperdimensional Learning in Embedded Systems. IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), pp. 253-260, Niigata, 2023.
- C78.** I. Nunes, M. Heddes, P. Verges, D. Abraham, A. Veidenbaum, A. Nicolau, T. Givargis. DotHash: Estimating Set Similarity Metrics for Link Prediction and Document Deduplication. ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), pp. 1758-1769, New York, 2023.
- C77.** M. Heddes, I. Nunes, T. Givargis, A. Nicolau. An Extension to Basis-Hypervectors for Learning from Circular Data in Hyperdimensional Computing. Design Automation Conference (DAC), pp. 1-6, San Francisco, 2023.
- C76.** N. Watkinson, D. Devineni, V. Joe, T. Givargis, A. Nicolau, A. Veidenbaum. Using Hyperdimensional Computing to Extract Features for the Detection of Type 2 Diabetes. IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW), pp. 149-156, St. Petersburg, 2023.
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- C69.** H. Buini, G. Sharon, S. Boyles, T. Givargis, P. Stone. Enhanced Delta-tolling: Traffic Optimization via Policy Gradient Reinforcement Learning. IEEE International Conference on Intelligent Transportation Systems (ITSC), pp. 47-52, Maui, November 2018.
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- C66.** M. Amir, T. Givargis. HES Machine: Harmonic Equivalent State Machine Modeling for Cyber-Physical Systems. IEEE International High-Level Design Validation and Test Workshop (HLDVT), pp. 31-38, Santa Cruz, October 2017.

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- C64.** H. Buini, T. Givargis. Fine-Grained Acceleration Control for Autonomous Intersection Management Using Deep Reinforcement Learning. IEEE Smart World Congress (SWC), pp. 1-8, San Francisco, August 2017.
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- C55.** S. Peter, T. Givargis. Utilizing Intervals in Component-Based Design of Cyber Physical Systems. IEEE International Conference on Computational Science and Engineering (CSE), pp. 635-642, Sydney, December 2013.
- C54.** B. Miller, F. Vahid, T. Givargis. Exploration with Upgradeable Models Using Statistical Methods for Physical Model Emulation. Design Automatic Conference (DAC), pp. 1-6, Austin, June 2013.
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- C13.** T. Givargis, F. Vahid, J. Henkel. Instruction-Based System-Level Power Evaluation of System-on-a-Chip Peripheral Cores. International Symposium on System Synthesis (ISSS), Madrid, September 2000.
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- C4.** J. Farrell, T. Givargis, M. Barth. Differential Carrier Phase GPS-Aided INS for Automotive Applications. American Control Conference (ACC), San Diego, June 1999.
- C3.** F. Vahid, T. Givargis. The Case for a Configure-and-Execute Paradigm. International Workshop on Hardware/Software Codesign (CODES), Rome, May 1999.

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## Workshop

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- W1.** A. Haghghat, C. Lopes, T. Givargis, A. Mandal. Location-Aware Web System. Workshop on Building Software for Pervasive Computing at the Object-Oriented Programming, Systems, Languages and Applications (OOPSLA) Conference, Vancouver, October 2004.

## Miscellaneous

- M1.** U. Brinkschulte, M. Cinque, T. Givargis, S. Russo. Guest Editorial. Journal of Software, vol. 4, no. 7, pp. 631-633, September 2009.

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- Jun Luan, Department of Electrical Engineering & Computer Science, University of California, Irvine, 2/11/2013.
- Francis Caster, Department of Electrical Engineering & Computer Science, University of California, Irvine, 2/8/2013.
- Gulfem Savrun Yeniceri, Department of Computer Science, University of California, Irvine, 1/16/2013.
- Aras Pirbadian, Department of Electrical Engineering & Computer Science, University of California, Irvine, 12/13/2012.
- Abbas Banaiyanmofrad, Department of Computer Science, University of California, Irvine, 7/17/2012.
- Siavash Ahrar, Department of Biomedical Engineering, University of California, Irvine, 6/15/2012.
- Zheng Wang, Department of Electrical Engineering & Computer Science, University of California, Irvine, 3/14/2012.
- Pei-Yuan, Department of Electrical Engineering & Computer Science, University of California, Irvine, 3/12/2012.
- Christoph Kerschbaumer, Department of Computer Science, University of California, Riverside, 11/29/2011.
- Brett Chien, Department of Electrical Engineering & Computer Science, University of California, Irvine, 11/28/2011.

- Mehryar Rahmatian, Department of Computer Science, University of California, Irvine, 9/16/2010.
- Deepak Mishra, Department of Computer Science, University of California, Irvine, 9/15/2010.
- Dali Zhao, Department of Computer Science, University of California, Irvine, 9/2/2010.
- Tae Su Kim, Department of Computer Science, University of California, Irvine, 3/19/2010.
- Zhiming Chen, Department of Computer Science & Engineering, University of California, Irvine, 12/10/2009.
- Hessam Kooti, Department of Computer Science, University of California, Irvine, 12/7/2009.
- Vahid Salmani, Department of Computer Science & Engineering, University of California, Irvine, 12/2/2009.
- Marcelo Cintra, Department of Computer Science, University of California, Irvine, 11/17/2009.
- Patricia Lee, Department of Computer Science, University of California, Irvine, 9/18/2009.
- Rosario Cammarota, Department of Computer Science, University of California, Irvine, 9/17/2009.
- Kazuyuki Tanimura, Department of Computer Science, University of California, Irvine, 9/3/2009.
- Matthew Badin, Department of Computer Science, University of California, Irvine, 6/4/2009.
- Michael Bebenita, Department of Computer Science, University of California, Irvine, 5/29/2009.
- Mason Chang, Department of Computer Science, University of California, Irvine, 5/27/2009.
- Sangwon Chae, Department of Computer Science, University of California, Irvine, 12/9/2008.
- Wendy Zhang, Department of Computer Science, University of California, Irvine, 12/8/2008.
- Fred Tzeng, Department of Computer Science & Engineering, University of California, Irvine, 1/31/2008.
- Minyoung Kim, Department of Computer Science, University of California, Irvine, 1/15/2008.
- AmirHossein GholamiPour, Department of Computer Science, University of California, Irvine, 12/11/2007.
- Shahin Golshan, Department of Computer Science, University of California, Irvine, 12/10/2007.
- Scott Hendrickson, Department of Informatics, University of California, Irvine, 11/16/2007.
- David Sheldon, Department of Computer Science & Engineering, University of California, Riverside, 10/24/2007.
- Scott Sirowy, Department of Computer Science & Engineering, University of California, Riverside, 10/24/2007.
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- Zhen Zhang, Department of Computer Science, University of California, Irvine, 9/4/2007.
- Jing Qian, Department of Electrical Engineering & Computer Science, University of California, Irvine, 9/4/2007.
- Babak Salamat, Department of Computer Science, University of California, Irvine, 5/15/2007.
- Sudeep Pasricha, Department of Computer Science, University of California, Irvine, 2/7/2007.

- Deyi Pi, Department of Electrical Engineering & Computer Science, University of California, Irvine, 12/5/2006.
- Seung Eun Lee, Department of Electrical Engineering & Computer Science, University of California, Irvine, 12/1/2006.
- Jayram Nageswaran, Department of Computer Science, University of California, Irvine, 11/14/2006.
- Gabor Madl, Department of Computer Science, University of California, Irvine, 9/6/2006.
- Lei Zhou, Department of Electrical Engineering & Computer Science, University of California, Irvine, 6/16/2006.
- Love Singhal, Department of Computer Science, University of California, Irvine, 6/12/2006.
- Ilya Issenin, Department of Computer Science, University of California, Irvine, 5/23/2006.
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- Farzad Etemadi, Department of Electrical Engineering & Computer Science, University of California, Irvine, 4/13/2006.
- Vasanth Venkatachalam, Department of Computer Science, University of California, Irvine, 4/11/2006.
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- Ersin Sengul, Department of Electrical Engineering & Computer Science, University of California, Irvine, 3/8/2006.
- Daniel Jesus Valencia Sanchez, Department of Computer Science, University of California, Irvine, 2/24/2006.
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- Afshin Niktash, Department of Electrical Engineering & Computer Science, University of California, Irvine, 12/13/2005.
- Jun Ho Bahn, Department of Electrical Engineering & Computer Science, University of California, Irvine, 12/7/2005.
- Chulsung Park, Department of Electrical Engineering & Computer Science, University of California, Irvine, 12/6/2005.
- Aseem Gupta, Department of Electrical Engineering & Computer Science, University of California, Irvine, 9/14/2005.
- Gunar Schirner, Department of Computer Science, University of California, Irvine, 9/6/2005.
- Pramod Chandraiah, Department of Electrical Engineering & Computer Science, University of California, Irvine, 9/6/2005.
- Yan Huang, Department of Computer Science, University of California, Irvine, 8/24/2005.
- Partha Biswas, Department of Computer Science, University of California, Irvine, 6/13/2005.
- Jiming Liu, Department of Computer Science, University of California, Irvine, 5/6/2005.



- Pablo Diaz Gutierrez, Department of Computer Science, University of California, Irvine, 3/24/2005.
- Srinivas Vadlamani, Department of Electrical Engineering & Computer Science, University of California, Irvine, 3/16/2005.
- Rafael Lopez, Department of Computer Science, University of California, Irvine, 2/2/2005.
- Kiran Ramineni, Department of Computer Science, University of California, Irvine, 12/9/2004.
- Seung-mok Yoo, Department of Electrical Engineering & Computer Science, University of California, Irvine, 12/7/2004.
- Chen Liu, Department of Electrical Engineering & Computer Science, University of California, Irvine, 11/30/2004.
- Ashish Bhargave, Department of Electrical Engineering & Computer Science, University of California, Irvine, 11/2005/2004.
- Cristian Petrescu-Prahova, Department of Computer Science, University of California, Irvine, 9/13/2004.
- Shireesh Verma, Department of Computer Science, University of California, Irvine, 9/9/2004.
- Chris Fensch, Department of Computer Science, University of California, Irvine, 9/8/2004.
- Ning Wang, Department of Computer Science, University of California, Irvine, 9/1/2004.
- Enis Akay, Department of Electrical Engineering & Computer Science, University of California, Irvine, 6/2004/2004.
- Amir Kamalizad, Department of Electrical Engineering & Computer Science, University of California, Irvine, 6/3/2004.
- Deepak Chandra, Department of Computer Science, University of California, Irvine, 3/30/2004.
- Chunhui Zhang, Department of Electrical Engineering & Computer Science, University of California, Irvine, 3/15/2004.
- David Lee, Department of Chemistry, University of California, Irvine, 5/7/2003.
- Jinfeng Liu, Department of Electrical Engineering & Computer Science, University of California, Irvine, 3/20/2003.
- Mehrdad Reshadi, Department of Computer Science, University of California, Irvine, 3/19/2003.
- Chengzhi Pan, Department of Electrical Engineering & Computer Science, University of California, Irvine, 3/12/2003.
- Samar Abdi, Department of Computer Science, University of California, Irvine, 9/12/2002.
- Marcio Dias, Department of Informatics, University of California, Irvine, 6/3/2002.
- Chris Lüer, Department of Informatics, University of California, Irvine, 5/14/2002.
- Dongwan Shin, Department of Computer Science, University of California, Irvine, 9/20/2001.
- John Xie, Department of Computer Science, University of California, Irvine, 9/20/2001.
- Haobo Yu, Department of Computer Science, University of California, Irvine, 9/20/2001.
- Junyu Peng, Department of Computer Science, University of California, Irvine, 9/14/2001.

### **Senior Project Faculty Mentor (EECS 159)**

- Carlos Puentes, Computer Science & Engineering, 2019-2020.
- Kenney Phan, Computer Science & Engineering, 2019-2020.
- Christian Hernandez, Computer Science & Engineering, 2019-2020.
- Amy Yee, Computer Science & Engineering, 2019-2020.
- Chalida Pisuraj, Computer Science & Engineering, 2019-2020.
- Serena Thao Do, Computer Science & Engineering, 2019-2020.
- Tim Nguyen, Computer Science & Engineering, 2019-2020.
- Judith Dilini Rupasinghe, Computer Science & Engineering, 2019-2020.
- Kyla Celine Quilos, Computer Science & Engineering, 2019-2020.

### **Individual Study Faculty Mentor (CS 199)**

- Nadia Sadri, Department of Computer Science, University of California, Irvine, Summer 2019.
- Carlos David II Puentes, Department of Computer Science, University of California, Irvine, Spring 2019.
- Farnaz Safaei Takhtefoulad, Department of Computer Science, University of California, Irvine, Spring 2019.
- Tianyi Yang, Department of Computer Science, University of California, Irvine, Spring 2019.
- Jay Cheng, Department of Computer Science, University of California, Irvine, Spring 2019.
- Natalie Moshayedi, Department of Computer Science, University of California, Irvine, Summer 2015.
- Desiree Moshayedi, Department of Computer Science, University of California, Irvine, Summer 2015.
- Farshad Momtaz, Department of Computer Science, University of California, Irvine, Fall 2013, Winter 2014, Fall 2014.
- Jeanelle Castro, Department of Computer Science, University of California, Irvine, Winter 2013.
- Ina Li Liu, Department of Computer Science, University of California, Irvine, Fall 2012.
- Faraz Milani, Department of Electrical Engineering, University of California, Irvine, Spring 2012.
- Samir Majumdar, Department of Computer Science, University of California, Irvine, Summer 2011.
- Remington Brasga, Department of Computer Science, University of California, Irvine, Spring 2011.
- Jillian Gluck, Department of Computer Science, University of California, Irvine, Fall 2010.
- Sterling Pearson, Department of Computer Science, University of California, Irvine, Fall 2010.

### **Campus Wide Honors Research Faculty Mentor**

- Serena Thao Do, Computer Science & Engineering, 2019-2020.
- Carlos David II Puentes, Information & Computer Sciences, University of California, Irvine, 2019-2020.
- Christopher Joseph Dipalma, Information & Computer Sciences, University of California, Irvine, 2019-2020.

## **Undergraduate Research Opportunities Program (UROP) Faculty Mentor**

- Jonathan Wai-Shing Low, Computer Science & Engineering, University of California, Irvine, 2021.
- Manish Sinha, Information & Computer Sciences, University of California, Irvine, 2007.
- Hussien Sleiman, Information & Computer Sciences, University of California, Irvine, 2005.
- Luis Angel, Information & Computer Sciences, University of California, Irvine, 2005.
- Martin Yasin, Information & Computer Sciences, University of California, Irvine, 2005.
- Anton Popov, Information & Computer Sciences, University of California, Irvine, 2005.
- Nick Mangano, Information & Computer Sciences, University of California, Irvine, 2005.
- Harvey Herela, Information & Computer Sciences, University of California, Irvine, 2005.
- Chad Christensen, Information & Computer Sciences, University of California, Irvine, 2005.
- Adam Wasserstrom, Information & Computer Sciences, University of California, Irvine, 2005.
- Lu Q Zheng, Information & Computer Sciences, University of California, Irvine, 2005.
- Ray Shen, Information & Computer Sciences, University of California, Irvine, 2005.
- Long Ting Kan, Information & Computer Sciences, University of California, Irvine, 2005.

## **Summer Undergraduate Research Program (SURP) Faculty Mentor**

- John Liu, Computer Science & Engineering, University of California, Riverside, 2003.
- Kenny Vu, Information & Computer Sciences, University of California, Irvine, 2002.