Tony Givargis
Professor of Computer Science
University of California, Irvine
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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), 2023-present.

- 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-present.

- 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), 2003-present.

- Design Automation Conference (DAC), 2022.

- Design Automation Conference (DAC), 2020.

- International Conference on Computer Aided Design (ICCAD), 2018-2020.

- 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 (ICESS), 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.

P8. 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.

P7. 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.

P6. J. Addink, T. Givargis. Interactive Irrigation System. United States Patent 6,950,728, September 2005.

P5. J. Addink, K. Buhler, T. Givargis. Modifying Irrigation Schedules of Existing Irrigation Controllers. United States Patent 6,892,114, May 2005.

P4. 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.

P3. K. Buhler, T. Givargis. Two Tire Irrigation Valve Controller. United States Patent 6,812,826, November 2004.

P2. J. Addink, T. Givargis. Detecting Weather Sensor Malfunctions. United States Patent 6,714,134, March 2004.

P1. 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. GraphD: 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 (TRETS), 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. Haghighat, 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

C83. M. Segura, P. Verges, J. Chen, R. Arangott, A. Garcia, L. Reynoso, A. Nicolau, T. Givargis, S. Gago-Masague. Enhanced Detection of Transdermal Alcohol Levels Using Hyperdimensional Computing on Embedded Devices. IEEE World Congress on Computational Intelligence (WCCI), to appear.

C82. P. Verges, I. Nunes, M. Heddes, T. Givargis, A. Nicolau. Molecular Classification Using Hyperdimensional Graph Classification. IEEE World Congress on Computational Intelligence (WCCI), to appear.

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), Article 129, pp. 1-26, Santiago, 2024.

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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C1. T. Givargis, F. Vahid. Interface Exploration for Reduced Power in Core-Based Systems. International Symposium on System Synthesis (ISSS), Hsinchu, December 1998.

Workshop

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W1. A. Haghighat, 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

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- 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.

- Yonghyun Hwang, Department of Computer Science, University of California, Irvine, 9/19/2007.

- 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.

- Sevin Fide, Department of Electrical Engineering & Computer Science, University of California, Irvine, 5/16/2006.

- 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.

- Jiwon Hahn, Department of Electrical Engineering & Computer Science, University of California, Irvine, 3/28/2006.

- 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.

- Hooman Torabi Parizi, Department of Electrical Engineering & Computer Science, University of California, Irvine, 12/15/2005.

- 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.