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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

- Professor, Department of Computer Science, University of California, Irvine, 2011-present.
- 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

- 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

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

- 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

- 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

- 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

- Vice Chair, CS Undergraduate Affairs, 2018-present.
- 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

- 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**

### **Tutorials**

- 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.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

- B3.** F. Vahid, T. Givargis. Programming Embedded Systems - An Introduction to Time-Oriented Programming. UniWorld Publishing, July 2010. [www.programmingembeddedsystems.com](http://www.programmingembeddedsystems.com).
- 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, July 2006.
- B1.** F. Vahid, T. Givargis. Embedded System Design: A Unified Hardware/Software Introduction. John Wiley and Sons, ISBN: 0471386782, October 2001.



## Journal

- J31.** M. Amir, T. Givargis and F. Vahid. Switching Predictive Control Using Reconfigurable State-Based Model. *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, to appear.
- J30.** M. Amir and 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 and 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 and 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 and 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 and 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, and 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. Ghodrati, 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. *Received the 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

- C69.** H. Buini, G. Sharon, S. Boyles, T. Givargis and P. Stone. Enhanced Delta-tolling: Traffic Optimization via Policy Gradient Reinforcement Learning. IEEE International Conference on Intelligent Transportation Systems (ITSC), to appear.
- C68.** H. Buini, G. Sharon, S. Boyles, T. Givargis and P. Stone. Link-based Parameterized Micro-tolling Scheme for Optimal Traffic Management. International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pp. 2013-2015, Stockholm, July 2018.
- C67.** M. Amir and T. Givargis. Hybrid State Machine Model for Fast Model Predictive Control: Application to Path Tracking. International Conference on Computer-Aided Design (ICCAD), pp. 185-192, Irvine, November 2017.
- C66.** M. Amir and 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.
- C65.** H. Buini, M. Fathollahi and T. Givargis. OPEB: Open Physical Environment Benchmark for Artificial Intelligence. IEEE International Forum on Research and Technologies for Society and Industry (RTSI), pp. 1-6, Modena, September 2017.
- C64.** H. Buini and 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.
- C63.** S. Peter and T. Givargis. Towards a Timing Attack Aware High-level Synthesis of Integrated Circuits. IEEE International Conference on Computer Design (ICCD), pp. 452-455, Phoenix, October 2016.
- C62.** F. Vahid, A. Edgcomb, B. Miller, T. Givargis. Learning Materials for Introductory Embedded Systems Programming using a Model-Based Discipline. American Society for Engineering Education (ASEE), 10.18260/p.27324, New Orleans, June 2016.
- C61.** S. Peter, F. Momtaz, T. Givargis. From the Browser to the Remote Physical Lab: Programming Cyber-Physical Systems. IEEE Frontiers in Education (FIE), pp. 1-7, El Paso, October 2015.
- C60.** V. Gunes, S. Peter, T. Givargis. Improving Energy Efficiency and Thermal Comfort of Smart Buildings with HVAC Systems in the Presence of Sensor Faults. IEEE International Conference on Embedded Software and Systems (ICCESS), pp. 945-950, New York, August 2015.
- C59.** V. Gunes and T. Givargis. XGRID: A Scalable Many-Core Embedded Processor. IEEE International Conference on Embedded Software and Systems (ICCESS), pp. 1143-1146, New York, August 2015.
- C58.** H. Buini, S. Peter, T. Givargis. Including Variability of Physical Models into the Design Automation of Cyber-Physical Systems. Design Automation Conference (DAC), pp. 153:1-153:6, San Francisco, June 2015.
- C57.** T. Springer, S. Peter, T. Givargis. Resource Synchronization in Hierarchically Scheduled Real-Time Systems using Preemptive Critical Sections. IEEE International Symposium on Object/Component-Oriented Real-Time Distributed Computing (ISORC), pp. 293-300, Reno, June 2014.
- C56.** V. Gunes, S. Peter, T. Givargis. Modeling and Mitigation of Faults in Cyber-Physical Systems with Binary Sensors. IEEE International Conference on Computational Science and Engineering (CSE), pp. 515-522, Sydney, December 2013.
- 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.
- C53.** S. Peter, F. Vahid, T. Givargis. A Ball Goes to School iŒ Our Experiences from a CPS Design Experiment. Workshop on Cyber-Physical Systems Education (CPS-Ed) at Cyber Physical Systems Week (CPSWeek), pp. 1-4, Philadelphia, April 2013.
- C52.** B. Miller, F. Vahid, T. Givargis. Embedding-Based Placement of Processing Element Networks on FPGAs for Physical Model Simulation. International Symposium on Field-Programmable Gate Arrays (FPGA), pp. 181-190, Monterey, February 2013.
- C51.** T. Chou, C. Huang, B. Miller, F. Vahid, T. Givargis. An Efficient Compression Scheme for Checkpointing of FPGA-Based Digital Mockups. IEEE/ACM Asian and South Pacific Design Automation Conference (ASP-DAC), pp. 632-637, Yokohama, January 2013.
- C50.** B. Miller, F. Vahid, T. Givargis. RIOS: A Lightweight Task Scheduler for Embedded Systems. Workshop on Embedded Systems Education (WESE), Tampere, October 2012.
- C49.** C. Huang, B. Miller, F. Vahid, T. Givargis. Synthesis of Custom Networks of Heterogeneous Processing Elements for Complex Physical System Emulation. International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), pp. 215-224, Tampere, October 2012.
- C48.** B. Miller, F. Vahid, T. Givargis. MEDS: Mockup Electronic Data Sheets for Automated Testing of Cyber-Physical Systems Using Digital Mockups. Design Automation and Test in Europe (DATE), pp. 1417-1420, Grenoble, March 2012.
- C47.** B. Miller, F. Vahid, T. Givargis. Digital Mockups for the Testing of a Medical Ventilator. ACM SIGHIT International Health ACM SIGHIT International Health Informatics Symposium (IHI), pp. 859-862, Miami, January 2012.
- C46.** B. Miller, F. Vahid, T. Givargis. Application-Specific Codesign Platform Generation for Digital Mockups in Cyber-Physical Systems. Electronic System Level Synthesis Conference (ESLsyn), pp. 1-6, San Diego, June 2011.
- C45.** M.A. Ghodrat, T. Givargis. Efficient Dynamic Voltage/Frequency Scaling through Algorithmic Loop Transformation. International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), pp. 203-209, Grenoble, October 2009.
- C44.** S. Sirowy, F. Vahid, T. Givargis. Digitally-Bypassed Transducers: Interfacing Digital Mockups to Real-Time Medical Equipment. International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS), pp. 919-922, Minneapolis, September 2009.
- C43.** A. Ghosh, T. Givargis. Source Routing made Practical in Embedded Networks. International Conference on Computer Communications and Networks (ICCCN), pp. 1-6, San Francisco, August 2009.
- C42.** A. Ghosh, T. Givargis. QoS Routing in Wired Sensor Networks with Partial Updates. World Academy of Science, Engineering and Technology (WASED), pp. 389-393, Oslo, July 2009.
- C41.** S.K. Mylavarapu, S. Choudhuri, A. Shrivastava, J. Lee, T. Givargis. FSAF: File System Aware Flash Translation Layer for NAND Flash Memories. Design Automation and Test in Europe (DATE), pp. 339-344, Dresden, April 2009.
- C40.** S. Choudhuri, T. Givargis. FlashBox: A System for Logging Non-Deterministic Events in Deployed Embedded Systems. International ACM Symposium on Applied Computing (SAC), pp. 1676-1682, Honolulu, March 2009.

- C39.** M.A. Ghodrati, T. Givargis, A. Nicolau. Control Flow Optimization in Loops using Interval Analysis. International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES), pp. 157-166, Atlanta, October 2008. *Received the 2008 CASES Best Paper Award.*
- C38.** F. Vahid, T. Givargis. Timing is Everything - Embedded Systems Demand Early Teaching of Structured Time-Oriented Programming. Workshop on Embedded Systems Education (WESE), Atlanta, October 2008.
- C37.** S. Sirowy, D. Sheldon, T. Givargis, F. Vahid. Virtual Microcontrollers. Workshop on Embedded Systems Education (WESE), Atlanta, October 2008.
- C36.** F. Vahid, T. Givargis. Highly-Cited Ideas in System Codesign and Synthesis. International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), pp. 191-196, Atlanta, October 2008.
- C35.** S. Choudhuri, T. Givargis. Deterministic Service Guarantees for NAND Flash using Partial Block Cleaning. International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), pp. 19-24, Atlanta, October 2008.
- C34.** S. Choudhuri, T. Givargis. Real-Time Access Guarantees for NAND Flash using Partial Block Cleaning. Workshop on Software Technologies for Future Embedded & Ubiquitous Systems (SEUS), pp. 138-149, Italy, September 2008.
- C33.** A. Ghosh, T. Givargis. A Software Architecture for Accessing Data in Sensor Networks. International Conference on Networked Sensing Systems (INSS), pp. 67-70, Japan, June 2008.
- C32.** S. Choudhuri, T. Givargis. Performance Improvement of Block Based NAND Flash Translation Layer. International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS), pp. 257-262, Salzburg, September 2007.
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- C30.** S. Choudhuri, T. Givargis. System Architecture for Software Peripherals. Asia and South Pacific Design Automation Conference (ASP-DAC), pp. 56-61, Tokyo, January 2007.
- C29.** A. Nacul, T. Givargis. Phantom: A Serializing Compiler for Multitasking Embedded Software. American Control Conference (ACC), pp. 1918-1923, Minneapolis, June 2006. *Received the 2006 ACC Best Paper Award.*
- C28.** M.A. Ghodrati, T. Givargis, A. Nicolau. Equivalence Checking of Arithmetic Expressions using Fast Evaluation. International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES), pp. 147-156, San Francisco, September 2005.
- C27.** A. Nacul, T. Givargis. Lightweight Multitasking Support for Embedded Systems using the Phantom Serializing Compiler. Design Automation and Test in Europe (DATE), pp. 742-747, Munich, March 2005.
- C26.** A. Ghosh, T. Givargis. LORD: A Localized, Reactive and Distributed Protocol for Node Scheduling in Wireless Sensor Networks. Design Automation and Test in Europe (DATE), pp. 190-195, Munich, March 2005.
- C25.** A. Mandal, C.V. Lopes, T. Givargis, A. Haghghat, R. Jurdak, P. Baldi. Beep: 3D Indoor Positioning Using Audible Sound. IEEE Consumer Communications and Networking Conference (CCNC), pp. 348-353, Las Vegas, January 2005.

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- C23.** A. Nacul, T. Givargis. Dynamic Voltage and Cache Reconfiguration for Low Power. Design Automation and Test in Europe (DATE), pp. 1376-1377, Paris, February 2004.
- C22.** M. Buss, T. Givargis, N. Dutt. Exploring Efficient Operating Points for Voltage Scaled Embedded Processor Cores. Real-Time Systems Symposium (RTSS), pp. 275-281, Cancun, December 2003.
- C21.** A. Ghosh, T. Givargis. Cache Optimization for Embedded Processor Cores: An Analytical Approach. International Conference on Computer-Aided Design (ICCAD), pp. 342-347, San Jose, November 2003.
- C20.** T. Givargis. Improved Indexing for Cache Miss Reduction in Embedded Systems. Design Automation Conference (DAC), pp. 872-880, Anaheim, June 2003.
- C19.** A. Ghosh, T. Givargis. Analytical Design Space Exploration of Caches for Embedded Systems. Design Automation and Test in Europe (DATE), pp. 650-655, Munich, March 2003.
- C18.** T. Givargis, D. Eppstein. Reference Caching Using Unit Distance Redundant Codes for Activity Reduction on Address Buses. International Workshop on Embedded System Hardware/Software Codesign (ESCODES), San Jose, September 2002.
- C17.** M. Palesi, T. Givargis. Multi-Objective Design Space Exploration Using Genetic Algorithms. International Workshop on Hardware/Software Codesign (CODES), Estes Park, May 2002.
- C16.** T. Givargis, F. Vahid, J. Henkel. System-Level Exploration for Pareto-Optimal Configurations in Parameterized Systems-on-a-Chip. International Conference on Computer-Aided Design (ICCAD), San Jose, November 2001.
- C15.** T. Givargis, F. Vahid, J. Henkel. Trace-Driven System-Level Power Evaluation of System-on-a-Chip Peripheral Cores. Asia and South Pacific Design Automation Conference (ASP-DAC), Yokohama, January 2001.
- C14.** G. Stitt, F. Vahid, T. Givargis, R. Lysecky. A First-Step Towards an Architecture Tuning Methodology. International Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES), San Jose, November 2000.
- 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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- C11.** T. Givargis, F. Vahid. Parameterized System Design. International Workshop on Hardware/Software Codesign (CODES), San Diego, May 2000.
- C10.** T. Givargis, F. Vahid, J. Henkel. Fast Cache and Bus Power Estimation for Parameterized System-on-a-Chip Design. Design Automation and Test in Europe (DATE), Paris, March 2000.
- C9.** R. Lysecky, F. Vahid, T. Givargis. Techniques for Reducing Read Latency of Core Bus Wrappers. Design Automation and Test in Europe (DATE), Paris, March 2000. *Received the 2000 DATE Best Paper Award.*
- C8.** T. Givargis, F. Vahid, J. Henkel. A Hybrid Approach for Core-Based System-Level Power Modeling. Asia and South Pacific Design Automation Conference (ASPDAC), Yokohama, January 2000.

- C7.** T. Givargis, J. Henkel, F. Vahid. Interface and Cache Power Exploration for Core-Based Embedded System Design. International Conference on Computer-Aided Design (ICCAD), San Jose, November 1999.
- C6.** R. Lysecky, F. Vahid, T. Givargis, R. Patel. Pre-Fetching for Improved Core Interfacing. International Symposium on System Synthesis (ISSS), San Jose, November 1999.
- C5.** J. Farrell, T. Givargis. Experimental Differential GPS Reference Station Evaluation. American Control Conference (ACC), San Diego, June 1999.
- 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.
- C2.** F. Vahid, T. Givargis. Incorporating Cores into System-Level Specification. International Symposium on System Synthesis (ISSS), Hsinchu, December 1998.
- C1.** T. Givargis, F. Vahid. Interface Exploration for Reduced Power in Core-Based Systems. International Symposium on System Synthesis (ISSS), Hsinchu, December 1998.

## Workshop

- W2.** A. Nacul, M. Lajolo, T. Givargis. Interface-Centric Abstraction Level for Rapid Hardware/Software Integration. Forum on Specification and Design Languages (FDL), Lausanne, September 2005.
- W1.** A. Haghghat, C. Lopes, T. Givargis, and 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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- Martin Yasin, Information & Computer Sciences, University of California, Irvine, 2005.
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