



Kurdahi and Nassar Receive ASP-DAC 2016 Best Paper

Highlights

- Kurdahi and Nassar Receive ASP-DAC Best Paper Award
- AI Faruque and Vatavavar Receive DATE Best Paper Award
- CECS Seminar Series Highlights
- Visitor Profile: Yi Li

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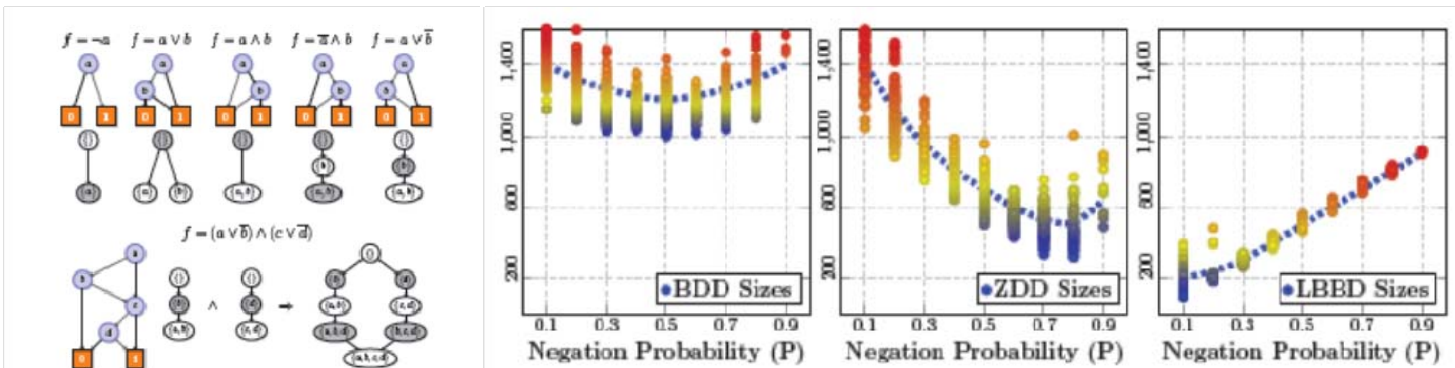
The 21st Asia and South Pacific Design Automation Conference (ASP-DAC 2016) opened on January 25, 2016, in Macao, China. ASP-DAC is an annual international conference on VLSI design automation in Asia and South Pacific regions, one of the most active regions of design and fabrication of silicon chips in the world. The conference aims at providing the Asian and South Pacific CAD/DA and Design community with opportunities of presenting recent advances and with forums for future directions in technologies related to Electronic Design Automation (EDA). CECS Director, Prof. Fadi Kurdahi and his graduate student Ahmed Nassar won the ASP-DAC best paper award for their paper titled, "*Lattice-Based Boolean Diagrams: Canonical, Order-Independent Graphical Representations of Boolean Functions*".

The paper presents lattice-based Boolean diagrams (LBBDs), a graphical representation of Boolean functions that is not derived from binary decision diagrams (BDDs), as well as symbolic manipulation algorithms. It also identifies a class of Boolean functions where LBBDs are demonstrably more efficient to construct, and reason with, when compared to BDDs. The case studies include ITC99 and MCNC benchmarks, randomly generated cube covers or sum-of-products (SOP) formulas as well as multi-level Boolean formulas. Finally, LBBDs proved to be instrumental to the efficient runtime verification of software over distributed multiprocessor systems.

ASP-DAC cont. & DATE 2016

ASP-DAC Best Paper (cont. from pg 1)

Boolean functions, widely used to describe digital circuits and a large family of problems in computer science, have been successfully represented graphically as binary decision diagrams (BDDs) and its derivatives. This triggered a revolution in logic synthesis, equivalence checking and symbolic model checking. However, Boolean functions lack a universally efficient representation and it is widely believed that none exists. In an attempt to explore the vast Boolean function space beyond the capabilities of BDDs, this paper on Lattice-based Boolean diagrams (LBBDs) proposes a new family of graphical representations by focusing on the lattice structure over Boolean variables. More refined versions of the algorithms and generalizations even beyond Boolean functions are now in the making.



Al Faruque and Vatapavar Receive DATE 2016 Best Paper Award

CECS had a successful year at the 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016). The four-day event was held in Dresden, Germany on March 14-18, 2016, with 1400 participants and exhibitors from 50 countries.



For the 19th successive year, DATE is the main European technical event which bringing together designers and design automation users, researchers and vendors, as well as specialists in the hardware and software design, test and manufacturing of electronic circuits and systems. It puts strong emphasis on both ICs/SoCs, reconfigurable hardware and embedded systems, including embedded software.

Congratulations to Prof. Mohammad Al Faruque and his graduate student Korosh Vatapavar for receiving the best paper award for their research, titled "*OTEM: Optimized Thermal and Energy management for Hybrid Electrical Storage in Electric Vehicles*".

DATE Best Paper cont. & More

Their paper presents a new technique for optimizing the utilization of the batter/ultracapacitor and the battery temperature in a hybrid vehicle's system to extend driving range and improve battery life.

More from DATE 2016

CECS-affiliated researcher, Prof. Wolfgang Nebel served on the Executive Committee as the EDAA (European Design and Automation Association) Liaison, and Prof. Yuko Hara-Azumi, who was a CECS visiting scholar from July-December 2010, served as the ASPDAC (Asia and South Pacific Design Automation Conference) Representative. Prof. Nikil Dutt co-chaired the Technical Committee on System Design, High-Level Synthesis and Optimization with Prof. Andreas Herkersdorf from Technical University of Munich.

The following 13 technical papers were accepted and presented by CECS research affiliates:

"ADVOCAT: Automated Deadlock Verification for On-Chip Cache Coherence and Interconnects,"
Freek Verbeek, Pooria M. Yaghini, Ashkan Eghbal, Nader Bagherzadeh

"PAIS: Parallelization Aware Instruction Scheduling for Improving Soft-Error Reliability of GPU-Based Systems," Haeseung Lee, Hsinchung Chen, Mohammad Abdullah Al Faruque

"Resistive Bloom Filters: From Approximate Membership to Approximate Computing with Bounded Errors," Vahideh Akhlaghi, Abbas Rahimi, Rajesh K. Gupta

"Topza: Mining High-Level Safety Properties from Logic Simulation Traces," Ahmed Nassar, Fadi J. Kurdahi, Salam R. Zantout

"Resistive Configurable Associative Memory for Approximate Computing," Mohsen Imani, Abbas Rahimi, Tajana S. Rosing

"Grater: An Approximation Workflow for Exploiting Data-Level Parallelism in FPGA Acceleration,"
Atieh Lotfi, Abbas Rahimi, Amir Yazdanbakhsh, Hadi Esmaeilzadeh, Rajesh K. Gupta

"Embedded Tutorial: Analog-/Mixed-Signal Verification Methods for AMS Coverage Analysis,"
Erich Barke, Andreas Furtig, Georg Glaeser, Christoph Grimm, Lars Hedrich, Stefan Heinen, Eckhard Hennig, Hyun-Sek Lukas Lee, Wolfgang Nebel, Gregor Nitsche, Markus Olbrich, Carna Radojicic, Fabian Speicher

"GLAsT: Learning Formal Grammars to Translate Natural Language Specifications into Hardware Assertions," Christopher B. Harris, Ian G. Harris

"Path Selection and Sensor Insertion Flow for Age Monitoring in FPGAs," Mohammad Ebrahimi, Zana Ghaderi, Eli Bozorgzadeh, Zain Navabi

"MASC: Ultra-Low Energy Multiple-Access Single-Charge TCAM for Approximate Computing,"
Mohsen Imani, Shruti Patil, Tajana S. Rosing

DATE cont. & Al Faruque Team

"RT Level Timing Modeling for Aging Prediction," Nils Koppaetzky, Malte Metzdorf, Reef Eilers, Domenik Helms, Wolfgang Nebel

"Analysis of NBTI Effects on High Frequency Digital Circuits," Ahmet Unutulmaz, Domenik Helms, Reef Eilers, Malte Metzdorf, Ben Kaczer, Wolfgang Nebel

"OTEM: Optimized Thermal and Energy Management for Hybrid Electrical Energy Storage in Electric Vehicles," Korosh Vatanparvar, Mohammad Abdullah Al Faruque, *****Best Paper Award*****



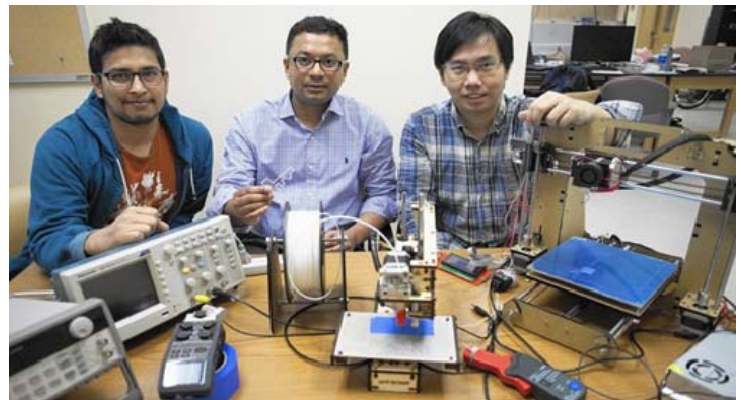
Al Faruque Team Finds Security Breach in 3-D Printing Process

Professor Mohammad Al Faruque's research team has discovered that captured sounds from 3-D printers will allow the reverse engineering of source code, leading to a cyber-security threat to manufactures. Prof. Al Faruque said the emissions produced by 3-D printers are acoustic signals that contain a lot of information, adding: "Initially, we weren't interested in the security angle, but we realized we were onto something, and we're seeing interest from other departments at UCI and from various U.S. government agencies."

Pictured from left to right are graduate student, Sujit Rokka Chhetri, Prof. Al Faruque, and graduate student Jian Wan, with the 3-D printer used in the test. As it moves, the device makes unique sounds that a computer algorithm can recognize and translate into usable code. This research finding has received prominent media coverage and is being followed closely by science publications, which include *Newsweek*, *Los Angeles Times*, *Science*, *Communications of the ACM*, and *Additive Manufacturing*. These articles may be found at the following links:

<http://www.newsweek.com/stealing-3d-printer-designs-sound-433147>

<http://www.latimes.com/socal/daily-pilot/news/tn-dpt-me-0330-printing-hack-20160329-story.html>



<http://science.sciencemag.org/content/352/6282/132.full>

<http://cacm.acm.org/news/199406-bad-vibrations-uci-researchers-find-security-breach-in-3d-printing-process/fulltext>

<http://cacm.acm.org/news/199406-bad-vibrations-uci-researchers-find-security-breach-in-3d-printing-process/fulltext>

This research study, "Cybermanufacturing: Defending Side Channel Attacks in Cyber-Physical Additive Layer Manufacturing Systems," is funded by a cyber-physical systems research grant from the National Science Foundation and is administered by CECS.

CECS Seminar Series Highlights



CECS Director Fadi Kurdahi hosted the EECS Distinguished Seminar on February 5th with invited speaker, Distinguished Professor Edward A. Lee from UC Berkeley. The title of his talk was "*The Internet of Important Things*".



In this talk, Prof. Lee analyzed how emerging technologies could translate into better models and better engineering methods for this evolving internet of important things. After the seminar, Prof. Al Faruque gave him a tour of the Advanced Integrated Cyber-Physical Systems (AICPS) lab, and he also met with EECS Chair Kumar Wickramashinghe, CS and EECS Professors Nalini Venkatasubramanian, Payam Heydari, Eli Bozorgzadeh and Nader Bagherzadeh.

Professor Peter Marwedel from the Technical University of Dortmund, Germany visited CECS on February 4 -5, 2016.

During his two-day visit, he met with CS and EECS Professors Eli Bozorgzadeh, Pai Chou, Nikil Dutt, Tony Givargis, Ian Haris, Brian Demsky, Ardalan Sani, Harry Xu, Mohammad Al Faruque. He also gave a Mini-Tutorial on the topic of "*Cyber-Physical Systems: Opportunities, Problems and (Some) Solutions*".

Prof. Marwedel's visit was hosted by CECS Founding Director, Daniel Gajski.



CECS Seminar Series cont.



Khaled N. Salama from King Abdullah University of Science and Technology (KAUST), Saudi Arabia, gave a talk titled, "Energy-Efficient Capacitance-to-Digital Converters for Low-Energy Sensor Nodes," on February 18, 2016, which was hosted by CECS Director Fadi Kurdahi and Prof. Ahmed Eltwail. During the visit, Prof. Salama and Prof. Fadi Kurdahi discussed a collaborative research plan on the topic of, *"Deep Neural Network Learning on a Budget using Resistive Associative Processing Accelerators"*.

Ing-Chao Lin, from National Cheng Kung University, Taiwan gave a talk on *"Mitigating BTI-induced Device Degradation: A Circuit and System Perspective"*, February 8, 2016, which was hosted by Prof. Nikil Dutt.



Visitor Profile & Seed Funding

Professor Yi Li



visiting scholar from September 2015 to August 2016, hosted by Prof. Fadi Kurdahi. She is an Assistant Professor in the School of Electronic Information Engineering at Tianjin University. She was an intern at Motorola for one year and worked with companies such as ST etc on various projects. Her previous projects included Digital TV Set-Top-Box, Safe transmission System and Voyage Data Recorder etc which has already been used in China. Her former research was the Channel Model and Related Technologies based on Internet of Things. Her main research interests include communication, embedded system and distributed system. Currently she is working with Prof. Fadi Kurdahi and graduate student Davit Hovhannisyn, in collaboration with Dr. Osama Algahtani, the Dean of Salman Bin Abdulaziz University on the project, "*Leakage detection in urban water distribution network*".

Professor Yi Li has joined the Center for Embedded and Cyber-physical Systems (CECS) as a

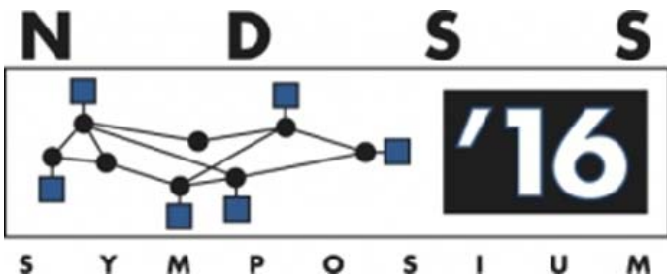
Eltawil and Krichmar Win Seed Funding



CECS-affiliated researchers, Professor Ahmed Eltawil and Jeffrey Krichmar were among the nineteen winners of the first round of the inaugural Research Seed Funding Program and the Technology Development Innovation Fund, a collaboration of the Office of the UCI Provost, Vice Chancellor for Research, Vice Chancellor for Health Affairs and the University's Applied Innovation Center. Prof. Eltawil was awarded \$50,000 for his project on self-interference cancellation in full-duplex system. Prof. Krichmar received \$25,000 for his innovation on neuromorphic robot that interacts with people through tactile sensing and bi-directional learning.

NDSS Award & E-Week Honors

Al Faruque Receives NDSS 2016 Distinguished Poster Award



Professor Mohammad Al Faruque and his student, Sujit Rokka Chhetri have received the Distinguished Poster Award in the Network and Distributed System Security (NDSS) Symposium, 2016. They have received this award for their

poster “Exploiting Acoustic Side-Channel for Attack on Additive Manufacturing Systems”. NDSS is one of the most influential conferences in the area of security. ISOC NDSS fosters information exchange among researchers and practitioners of network and distributed system security. The target audience includes those interested in practical aspects of network and distributed system security, with a focus on actual system design and implementation. For more information about NDSS, please visit

<http://www.internet-society.org/events/ndss-symposium-2016>



Al Faruque and Schmidt Honored at E-Week

CECS member, Professor Al Faruque, and Tim Schmidt, a CECS doctoral candidate were recently honored by the Henry Samueli School of Engineering's Engineering Student Council (ECS) for their teaching excellence with the awards of EECS Professor of the Year 2015-16 and EECS Graduate Student of the Year 2015-16, respectively.



These are the only official engineering awards given at UC Irvine which recognize outstanding professors, TAs, and students from each department. The award banquet was held on Friday, February 26th, 2016 at the Newkirk Alumni Center. It is part of the weeklong celebration for National Engineering Week (E-Week) aimed at increasing public awareness and appreciation for the engineering

Publications

Publications

The following papers were published by CECS affiliates from Jan 2016 through March 2016 (and unreported papers from previous eNews).

Author, Title, Publication

Conference Proceedings

Jian Ouyang, Min Lin, Wei-Ping Zhu, Daniel Massicotte, A. Lee Swindlehurst, "**Energy Efficient Beamforming for Secure COmmunication in Cognitive Radio Networks**," 2016 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2016): 3496-3500, Shanghai, China, March 20-25, 2016

Nga Dang, Zana Ghaderi, Moonju Park, Eli Bozorgzadeh, "**Harvesting-Aware Adaptive Energy Management in Solar-Powered Embedded Systems**," The 17th International Symposium on Quality Electronic Design (ISQED 2016): 331-337, Santa Clara, CA, USA, March 15-16, 2016

Theodore Winograd, Hassan Salmani, Hamid Mahmoodi, Houman Homayoun, "**Preventing Design Reverse Engineering with Reconfigurable Spin Transfer Torque LUT Gates**," The 17th International Symposium on Quality Electronic Design (ISQED 2016): 242-247, Santa Clara, CA, USA, March 15-16, 2016

Mohsen Imani, Pietro Mercati, Tajana Rosing, "**ReMAM: Low Energy Resistive Multi-Stage Associative Memory for Energy Efficient Computing**," The 17th International Symposium on Quality Electronic Design (ISQED 2016): 101-106, Santa Clara, CA, USA, March 15-16, 2016

Mohsen Imani, Shruti Patil, Tajana S. Rosing, "**Low Power Data-Aware STT-RAM Based Hybrid Cache Architecture**," The 17th International Symposium on Quality Electronic Design (ISQED 2016): 88-94, Santa Clara, CA, USA, March 15-16, 2016

Venkata Yaswanth Raparti, Sudeep Pasricha, "**Memory-Aware Circuit Overlay NoCs for Latency Optimized GPGPU Architectures**," The 17th International Symposium on Quality Electronic Design (ISQED 2016): 63-68, Santa Clara, CA, USA, March 15-16, 2016

Sai Vineel Reddy Chittamuru, Ishan G. Thakkar, Sudeep Pasricha, "**Process Variation Aware Crosstalk Mitigation for DWDM Based Photonic NoC Architectures**," The 17th International Symposium on Quality Electronic Design (ISQED 2016): 57-62, Santa Clara, CA, USA, March 15-16, 2016

Freek Verbeek, Pooria M. Yaghini, Ashkan Eghbal, Nader Bagherzadeh, "**ADVOCAT: Automated Deadlock Verification for On-Chip Cache Coherence and Interconnects**," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 1640-1645, Dresden, Germany, March 14-18, 2016

Haeseung Lee, Hsinchung Chen, Mohammad Abdullah Al Faruque, "**PAIS: Parallelization Aware Instruction Scheduling for Improving Soft-Error Reliability of GPU-Based Systems**," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 1568-1573, Dresden, Germany, March 14-18, 2016

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Publications

Publications

- | Author, Title, Publication | Conference Proceedings |
|---|------------------------|
| Vahideh Akhlaghi, Abbas Rahimi, Rajesh K. Gupta, " Resistive Bloom Filters: From Approximate Membership to Approximate Computing with Bounded Errors ," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 1441-1444, Dresden, Germany, March 14-18, 2016 | |
| Ahmed Nassar, Fadi J. Kurdahi, Salam R. Zantout, " Topza: Mining High-Level Safety Properties from Logic Simulation Traces ," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 1473-1476, Dresden, Germany, March 14-18, 2016 | |
| Mohsen Imani, Abbas Rahimi, Tajana S. Rosing, " Resistive Configurable Associative Memory for Approximate Computing ," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 1327-1332, Dresden, Germany, March 14-18, 2016 | |
| Atieh Lotfi, Abbas Rahimi, Amir Yazdanbakhsh, Hadi Esmaeilzadeh, Rajesh K. Gupta, " Grater: An Approximation Workflow for Exploiting Data-Level Parallelism in FPGA Acceleration ," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 1279-1284, Dresden, Germany, March 14-18, 2016 | |
| Erich Barke, Andreas Furtig, Georg Glaeser, Christoph Grimm, Lars Hedrich, Stefan Heinen, Eckhard Hennig, Hyun-Sek Lukas Lee, Wolfgang Nebel, Gregor Nitsche, Markus Olbrich, Carina Radujcic, Fabian Speicher, " Embedded Tutorial: Analog-/Mixed-Signal Verification Methods for AMS Coverage Analysis ," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 1102-1111, Dresden, Germany, March 14-18, 2016 | |
| Christopher B. Harris, Ian G. Harris, " GLAsT: Learning Formal Grammars to Translate Natural Language Specifications into Hardware Assertions ," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 966-971, Dresden, Germany, March 14-18, 2016 | |
| Mohammad Ebrahimi, Zana Ghaderi, Eli Bozorgzadeh, Zain Navabi, " Path Selection and Sensor Insertion Flow for Age Monitoring in FPGAs ," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 792-797, Dresden, Germany, March 14-18, 2016 | |
| Mohsen Imani, Shruti Patil, Tajana S. Rosing, " MASC: Ultra-Low Energy Multiple-Access Single-Charge TCAM for Approximate Computing ," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 373-378, Dresden, Germany, March 14-18, 2016 | |
| Nils Koppaetzky, Malte Metzendorf, Reef Eilers, Domenik Helms, Wolfgang Nebel, " RT Level Timing Modeling for Aging Prediction ," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 297-300, Dresden, Germany, March 14-18, 2016 | |

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Publications

- | Author, Title, Publication | Conference Proceedings |
|--|------------------------|
| Ahmet Unutulmaz, Domenik Helms, Reef Eilers, Malte Metzdorf, Ben Kaczer, Wolfgang Nebel, "Analysis of NBTI Effects on High Frequency Digital Circuits," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 223-228, Dresden, Germany, March 14-18, 2016 | |
| Korosh Vatanparvar, Mohammad Abdullah Al Faruque, "OTEM: Optimized Thermal and Energy Management for Hybrid Electrical Energy Storage in Electric Vehicles," 2016 Design, Automation & Test in Europe Conference & Exhibition (DATE 2016): 19-24, Dresden, Germany, March 14-18, 2016 <i>***Best Paper Award***</i> | |
| Sharad Mehrotra, Alfred Kobsa, Nalini Venkatasubramanian, Siva Raj Rajagopalan, "TIPPERS: A Privacy Cognizant to IoT Environment," 2016 IEEE International Conference on Pervasive Computing and Communication Workshops (PerCom Workshop 2016): 1-6, Sydney, Australia, March 14-18, 2016 | |
| Byron Hawkins, Brian Demsky, Michael B. Taylor, "BlackBox: Lightweight Security Monitoring for COTS Binaries," the 2016 International Symposium on Code Generation and Optimization (CGO 2016): 261-272, Barcelona, Spain, March 12-18, 2016 | |
| Jörg Walter, Ralph Görge, Wolfgang Nebel, "Predicting Performance and Energy Efficiency for Large-Scale Parallel Applications on Highly Heterogeneous Platforms," 19th GI/ITG/GMM Workshop for Methods and Languages for Modeling and Verification of Circuits and Systems (MBMV 2016): 116-127, Breisgau, Germany, March 1-2, 2016 | |
| Yuki Sawa, Ram Bhakta, Ian G. Harris, Christopher Hadnagy, "Detection of Social Engineering Attacks Through Natural Language Processing of Conversations," The 10th IEEE International Conference on Semantic Computing (ICSC 2016): 262-265, Laguna Hills, CA, USA, February 4-6, 2016 | |
| Zana Ghaderi, Eli Bozorgzadeh, "Aging-Aware High-Level Physical Planning for Reconfigurable Systems," The 21st Asia and South Pacific Design Automation Conference (ASP-DAC 2016): 631-636, Macao, Macao, January 25-28, 2016 | |
| Ahmed Nassar, Fadi J. Kurdahi, "Lattice-Based Boolean Diagrams," The 21st Asia and South Pacific Design Automation Conference (ASP-DAC 2016): 468-473, Macao, Macao, January 25-28, 2016 <i>***Best Paper Award***</i> | |
| Mohammad Abdullah Al Faruque, Korosh Vatanparvar, "Modeling, Analysis, and Optimization of Electric Vehicle HVAC Systems," The 21st Asia and South Pacific Design Automation Conference (ASP-DAC 2016): 423-428, Macao, Macao, January 25-28, 2016 | |

PUBLICATIONS

Author, Title, Publication	Conference Proceedings
Santanu Sarma, Tiago Muck, Majid Shoushtari, Abbas BanaiyanMofrad, Nikil Dutt, "Cross-Layer Virtual/Physical Sensing and Actuation for Resilient Heterogeneous Many-Core SoCs," The 21st Asia and South Pacific Design Automation Conference (ASP-DAC 2016): 395-402, Macao, Macao, January 25-28, 2016	
Gene Tsudik, Ersin Uzun, Christopher A. Wood, "AC3N: Anonymous Communication in Content-Centric Networking," 13th IEEE Annual Consumer Communications & Networking Conference (CCNC 2016): 988-991, Las Vegas, NV, USA, January 9-12, 2016	
Ishan G. Thakkar, Sudeep Pasricha, "Massed Refresh: An Energy-Efficient Technique to Reduce Refresh Overhead in Hybrid Memory Cube Architectures," The 29th International Conference on VLSI Design and 15th International Conference on Embedded Systems (VLSID 2016): 104-109, Kolkata, India, January 4-8, 2016	
Sai Vineel Reddy Chittamuru, Sudeep Pasricha, "SPECTRA: A Framework for Thermal Reliability Management in Silicon-Photonic Networks-on-Chip," The 29th International Conference on VLSI Design and 15th International Conference on Embedded Systems (VLSID 2016): 86-91, Kolkata, India, January 4-8, 2016	
Partha Pratim Pande, Sudeep Pasricha, Hiroki Matsutani, "The Future of NoCs: New Technologies and Architectures," The 29th International Conference on VLSI Design and 15th International Conference on Embedded Systems (VLSID 2016): 53-55, Kolkata, India, January 4-8, 2016	
Sandeep K. Shukla, "Cyber Security of Cyber Physical Systems: Cyber Threats and Defense of Critical Infrastructures," The 29th International Conference on VLSI Design and 15th International Conference on Embedded Systems (VLSID 2016): 30-31, Kolkata, India, January 4-8, 2016	
Nikil Dutt, Nima Taherinejad, "Self-Awareness in Cyber-Physical Systems," The 29th International Conference on VLSI Design and 15th International Conference on Embedded Systems (VLSID 2016):5-6, Kolkata, India, January 4-8, 2016	

Author, Title, Publication	Journal
Pooria M. Yaghini, Ashkan Eghbal, Siavash S. Yazdi, Nader Bagherzadeh, Michael M. Green, "Capacitive and Inductive TSV-to-TSV Resilient Approaches for 3D ICs," IEEE Transactions on Computers 65(3): 693-705, March 2016	
Jieyan Liu, Lubomir Bic, Haigang Gong, Siyu Zhan, "Data Collection for Mobile Crowdsensing in the Presence of Selfishness," EURASIP Journal on Wireless Communications and Networking 2016: 82, March 2016	
Songwen Pei, Myoung-Seo Kim, Jean-Luc Gaudiot, "Extending Amdahl's Law for Heterogeneous Multicore Processor with Consideration of the Overhead of Data Preparation," IEEE Embedded Systems Letters 8(1): 26-29, March 2016	

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- | Author, Title, Publication | Journal |
|---|--|
| Li You, Ziqi Gao, A. Lee Swindlehurst, Wen Zhong, " Channel Acquisition for Massive MIMO-OFDM with Adjustable Phase Shift Pilots ," | IEEE Transactions on Signal Processing 64(6):1461-1476, March 2016 |
| John Narayan, Sandeep K. Shukla, T. Charles Clancy, " A Survey of Automatic Protocol Reverse Engineering Tools ," | ACM Computing Surveys 48(3):40, February 2016 |
| Nathan Burow, Scott A. Carr, Stefan Brunthaler, Mathias Payer, Joseph Nash, Per Larsen, Michael Franz, " Control-Flow Integrity: Precision, Security, and Performance ," | CoRR abs/1602.04056, February 2016 |
| Tom Springer, Steffen Peter, Tony Givargis, " Fuzzy Logic Based Adaptive Hierarchical Scheduling for Periodic Real-Time Tasks ," | SIGBED Review 13(1), January 2016 |
| Alexis B. Graig, Matthew E. Phillips, Andrew Zaldivar, Rajan Bhattacharyya, Jeffrey L. Krichmar, " Investigation of Biases and Compensatory Strategies Using a Probabilistic Variant of the Wisconsin Card Sorting Test ," | Frontiers in Psychology 7:17, January 2016 |
| Jesse Elwell, Ryan Riley, Nael B. Abu-Ghazaleh, Dmitry V. Ponomarev, Lliano Cervesato, " Rethinking Memory Permissions for Protection Against Corss-Layer Attacks ," | ACM Transactions on Architecture and Code Optimization (TACO) 12(4): 56, January, 2016 |
| Nishit Asok Kapadia, Sudeep Pasricha, " A System-Level Cosynthesis Framework for Power Delivery and On-Chip Data Networks in Application-Specific 3-D ICs ," | IEEE Transactions on Very Large Scale Integration Systems 24(1): 3-16, January 2016 |
| Baris Arslan, Alex Orailoglu, " Power-Aware Delay Test Quality Optimization for Multiple Frequency Domains ," | IEEE Transactions on CAD of Integrated Circuits and Systems 35(1): 141-154, January 2016 |
| Jason Koh, Bharathan Balaji, Vahideh Akhlaghi, Yuvraj Agarwal, Rajesh Gupta, " Quiver: Using Control Perturbations to Increase the Observability of Sensor Data in Smart Buildings ," | CoRR abs/1601.0726, January 2016 |

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Center for Embedded and Cyber-Physical Systems, University of California, Irvine



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