



Volume 15, Issue 3  
Summer/Fall '15

# CECS eNEWS



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

## Chou and Luan Win ISLPED Design Award

### Highlights

- Chou and Luan, Design Award at ISLPED
- Al Faruque Named Hellman Fellow
- Hovercraft Camp-High School Outreach
- Student Profile Ramhadi Trimananda



CECS member and EECS Professor Pai Chou and his graduate student Jun Luan were chosen as the recipients of this year's Design Contest Award at the International Symposium on Low Power Electronics and Design (ISLPED) held in Rome, Italy on July 22-24, 2015, for their research paper titled "Low Power Detection of Sternocleidomastoid Muscle Contraction for Asthma Assessment and Control." In this work, they develop a wearable monitoring system based on an optical sensor that consists of an LED and a photo detector (PD) for asthma assessment and control.

ISLPED is the premier conference in low power design. The International Low Power Design Contest provides a forum for universities to showcase original "power-aware" designs and to highlight the design innovations targeting power efficiency improvement. Jun Luan is a 5th year Ph.D. student, expected to receive his doctorate degree in Winter 2016.

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# Faculty Awards & CECS Seminars

## Mohammad Al Faruque named 2015-16 UCI Hellman Fellow



CECS Member and EECS Professor Mohammad Al Faruque was chosen to receive the prestigious Hellman Fellowship Award, this year. The fel-

lowship will support his research titled, "Towards Secured Societal-Scale-Cyber-Physical Transportation System". Prof. Al Faruque and his research team will investigate new security solutions for cyber-physical transportation systems.

Today, the proliferation of computing and communication technologies have made it possible to build societal-scale cyber-enabled systems that are at the threshold of transforming societal infrastructure for transportation, energy, and healthcare. As an example of future prospective of societal-scale CPS for the coming decades,

there is the likelihood of commuting to work and exploring the countryside in autonomous and driverless cars that are capable of communicating with the roads traveled on. The communication systems that let these autos "talk" to other vehicles and the roads they travel can reduce traffic injuries and fatalities. But this new paradigm "makes that communication vulnerable to attackers that....would not only compromise car information but pose significant risk to the health and safety of human lives," said Al Faruque, who holds three U.S. patents. "New types and designs of security solutions are required for automotive communication systems" to be resistant to hacker attacks and other security threats.

Professor Al Faruque's current research is focused on system-level design of embedded systems and/or Cyber-Physical-Systems (CPS) with special interest on model-based design of software-integrated (multi)-physics systems, multi-core systems, real-time scheduling algorithms.

## CECS Invited Seminars and Distinguished Lecture

### "Secure Communications Over Wireless Networks Physical Layer Security: A Strategic Allie to Cryptography"

by Dr. Zouheir Rezki, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Friday, December 11, 2015

Faculty Hosts: Ahmed Eltawil & Mohammad Al Faruque



### "Mobile Technology Enabling Frictionless HealthCare"

by Dr. Aiman Abdel-Malek, Qualcomm Life, Founder & CEO, Frictionless Life Analytics

Tuesday, November 10, 2-15

Faculty Host: Fadi J. Kurdahi



# CECS Seminars cont. & HS Outreach

## CECS Seminars and Distinguished Lecture (cont from pg. 2)

### "Hardware Security in the Zynq All-Programmable Soc"

by Dr. Steve Trimberger, Xilinx  
Friday, October 2, 2015  
Faculty Host: Fadi J. Kurdahi



## UCI Engineering Majors team up with Citrus Hills Physics Teacher for first Hovercraft Camp High School Outreach

By Quoc-Viet Dang, CECS Ph.D. Candidate

Many of my peers and I are continually looking for ways to give back to the community and share our love of Engineering. My opportunity came during Memorial Day weekend when I joined several other UCI Engineering students from Triangle Fraternity, a fraternity specifically for engineers, architects, and scientists, at a High School Outreach Program at Citrus Hill High School in Perris, CA.



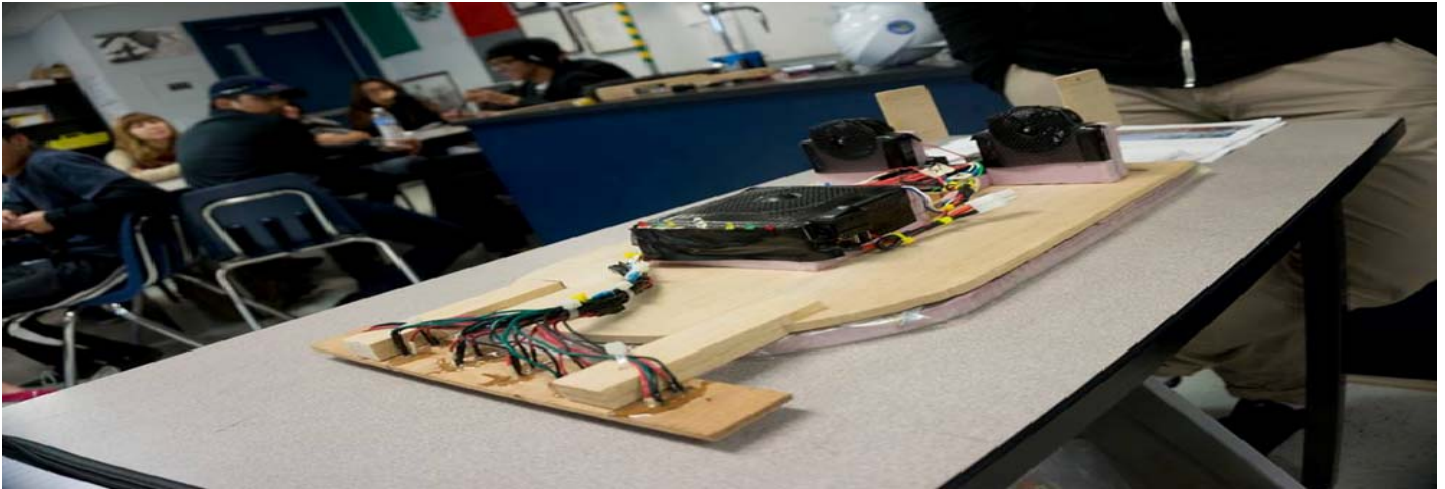
1: Enthusiastic future Engineeris, along with "camp staff" kneeling (from left to right): Daniel Hinkel, Quoc-Viet Dang, Dean Lalap, Michael Towne, Khalid Bafakih, Andrew Tee, and Kevin Liu



# High School Outreach cont.

## HS Outreach (cont. from pg. 3)...

This half-day outreach camp introduced high school students, many who have had very little exposure to Engineering, to basic Mechanical, Electrical, and Computer Engineering concepts. We helped guide them in constructing a miniature hovercraft that would be controlled by an Arduino board to follow a line laid out in electrical/gorilla tape.



2: Sample hovercraft built by UCI students from a course at UCI. The ones being built in this camp will be less sophisticated but will still function in a similar fashion.

The Arduino boards and laptops, as well as the main coordination efforts on the High School side, were provided by Mr. Towne and Citrus Hill High School. Some of the materials, such as batteries, fans, and photo-sensors were kindly loaned to us for use by the Henry Samueli School of Engineering at UC Irvine. The remaining support material was provided by Triangle Fraternity and directly from the fraternity members who attended.



3: Students getting a crash course in all things Engineering (as it relates to building a hovercraft).

## High School Outreach cont.

We were originally expecting approximately 20 students. When we arrived that afternoon, there were over 60 in attendance. It was a bit overwhelming but also awe-inspiring. It was amazing to see the engagement and attentiveness of all the High School students who took a day off of their weekend to participate in an Engineering Camp/Workshop. We had a lot of fun and positive feedback from both the students who showed up and the colleagues who presented and helped with the camp.



4: Having fun coming up with a non-standard design.



4: I believe they are discussing weight distribution and center of gravity issues for their craft.

It was very inspiring witnessing how an interdisciplinary group of engineers adapted course concepts and materials from classes taken at UC Irvine into a half-day workshop accessible for High School students. This camp was the brainchild of two undergraduate Engineering majors, Dean Lalap and Daniel Hinkel, who coordinated with Michael Towne, Physics Teacher at Citrus Hill.



# CECS Fall Qtr. Mtg. & Alumni Visit

## Fall Quarter 2015 Faculty and Student Meeting

CECS hosted a faculty and student gathering on Thursday, November 19th, 2015 at the Harut Barsamian Colloquia Room, to kick off the new Academic Year and welcome new graduate students. Professor Ian Harrison gave a talk on his research, titled "Extracting Assertion Directly from Natural Language Specifications".

In this talk, a technique was introduced to automatically generate formal, executable assertions from natural language assertion descriptions written in English. Assertions are program invariants which are commonly used for result checking in the hardware verification process. Prof. Harris and his research group present an attribute grammar which captures the semantics of a subset of English language assertion descriptions. Using the attribute grammar, they parse assertion descriptions and generate semantically equivalent formal models. They have evaluated the technique using a large set of industrial assertion descriptions.



## Alumni Visit



CECS Alumnus Gunar Schirner, Assoc. Professor, Electrical & Computer Engineering at Northeastern University, visited CECS on Wednesday, October 28th, 2015 while attending the Frontier of Engineering Education (FOEE) Symposium held at the Beckman Center. During his visit, he met with several CECS faculty members to dis-

cuss potential research collaborations and chatted with CECS staff and students about his life in Boston.

Prof. Schirner received his PhD in Computer Engineering from UCI in 2008, under the mentorship of Prof. Rainer Doemer. Prior to joining the Northeastern faculty in Fall 2009, he was an assistant project scientist at CECS working on Professor Daniel Gajski's private contract with the Japanese Aerospace Exploration Agency (JAXA) through InterDesign Technologies, Inc.(IDT) developing new concepts and techniques for embedded systems design from high level specifications. His current research interests include embedded systems modeling, system-level design, and the synthesis of embedded software.

# CECS Student Profile

## New Student Profile: Rahmadi Trimananda

Hi there! My name is Rahmadi Trimananda and I come originally from Indonesia. I am a new Ph.D. student that started in Fall 2015. Currently I work with Prof. Brian Demsky in a research project that attempts to devise a new programming language / programming paradigm for IoT (*Internet of Things*). Prior to this Ph.D. study, I finished my bachelor's study in 2006 at University of Pelita Harapan in Indonesia. Then, I received the Indonesian Ministry of Communication and Information Technology scholarship for a master's study at Delft University of Technology, Netherlands.

In my master's final project, I worked with Prof. Edoardo Charbon who specialized in single photon counting techniques. His research was a part of the Megafame project which was a collaboration of top European universities such as TU Delft, EPFL, and University of Edinburgh. In this project, we conducted research on a single photon counting device called SPAD (Single Photon Avalanche Diode) array. One application of the system is to use it in FLIM (Fluorescence Lifetime Imaging Microscopy) that produces a colorful image of a living body with each color representing a certain intensity ratio of photon counts.

After obtaining a master's degree, I went back home and worked at University of Pelita Harapan as a junior lecturer for 2 years. Subsequently, I decided to gain industrial experience by joining Intel Corporation, a company specializing in semiconductor and microprocessors. I held several roles, i.e. software engineer for a random test tool in the System Validation department, full-chip integration system validation engineer, which requires mastery of SoC and IP blocks as a complete system, and power management IC validation engineer. During this time, I published two publications, each at Intel Validation Summit and Intel Design Test Technology Conference as a reflection of my long time passion for research. Later, I decided to be completely involved in research and that is how I ended up joining UCI's EECS department as a full-time Ph.D. student.



# Publications

## Publications

The following papers were published by CECS affiliates from July 2015 through December 2015 (and unreported papers from previous eNews).

### Author, Title, Publication

### Conference Proceedings

Baris Aksanli, Alper Sinan Akyurek, Tajana Rosing, "**Minimizing the Effects of Data Centers on Microgrid Stability**," The Sixth International Green and Sustainable Computing Conference (IGSC 2015):1-9, Las Vegas, NV, USA, December 14-16, 2015

Songwen Pei, Junge Zhang, Naixue Xiong, Myoung-Seo Kim, Jean-Luc Gaudiot, "**Performance-Energy Efficiency Model of Heterogeneous Parallel Multicore Systems**," The Sixth International Green and Sustainable Computing Conference (IGSC 2015):1-6, Las Vegas, NV, USA, December 14-16, 2015

Alper Sinan Akyurek, Baris Aksanli, Tajana Simunic Rosing, "**S2Sim: Smart Grid Swarm Simulator**," The Sixth International Green and Sustainable Computing Conference (IGSC 2015):1-6, Las Vegas, NV, USA, December 14-16, 2015

Luis Cruz-Filipe, Michael Franz, Artavazd Hakhverdyan, Marta Ludovico, Isabel Nunes, Peter Schneider-Kamp, "**repAlrC: A Tool for Ensuring Data Consistency**," The International Conference on Knowledge Management and Information Sharing (KMIS 2015): 17-26, Lisbon, Portugal, November 12-14, 2015

Shruti Patil, Yeseong Kim, Kunal Korgaonkar, Ibrahim Awwal, Tajana Simunic Rosing, "**Characterization of User's Behavior Variations for Design of Replayable Mobile Workloads**," The 7th International Conference - Mobile Computing, Applications, and Services (MobiCASE 2015): 51-70, Berlin, Germany, November 12-13, 2015

Francesco Paterna, Tajana Simunic Rosing, "**Modeling and Mitigation of Extra-SoC Thermal Coupling Effects and Heat Transfer Variations in Mobile Devices**," IEEE/ACM International Conference on Computer-Aided Design (ICCAD 2015): 831-838, Austin, TX, USA, November 2-6, 2015

Yeseong Kim, Mohsen Imani, Shruti Patil, Tajana Simunic Rosing, "**CAUSE: Critical Application Usage-Aware Memory System Using Non-Volatile Memory for Mobile Devices**," IEEE/ACM International Conference on Computer-Aided Design (ICCAD 2015): 690-696, Austin, TX, USA, November 2-6, 2015

Nga Dang, Robert Valentini, Eli Bozorgazadeh, Marco Levorato, Nalini Venkatasubramanian, "**A Unified Stochastic Model for Energy Management in Solar-Powered Embedded Systems**," IEEE/ACM International Conference on Computer-Aided Design (ICCAD 2015): 621-626, Austin, TX, USA, November 2-6, 2015

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# Publications

## Publications

### Author, Title, Publication

### Conference Proceedings

Yeseong Kim, Francesco Parterna, Sameer Tilak, Tajana Simunic Rosing, **"Smartphone Analysis and Optimization Based on User Activity Recognition,"** IEEE/ACM International Conference on Computer-Aided Design (ICCAD 2015): 605-612, Austin, TX, USA, November 2-6, 2015

Nikil D. Dutt, Axel Jantsch, Santanu Sarma, **"Self-Aware Cyber-Physical Systems-on-Chip,"** IEEE/ACM International Conference on Computer-Aided Design (ICCAD 2015): 46-50, Austin, TX, USA, November 2-6, 2015

Katayoun Neshatpour, Maria Malik, Mohammad Ali Ghodrat, Avesta Sasan, Houman Homayoun, **"Energy-Efficient Acceleration of Big Data Analytics Applications Using FPGAs,"** 2015 IEEE International Conference on Big Data (Big Data 2015): 115-123, Santa Clara, CA, USA, October 29 - November 1, 2015

Maria Malik, Setareh Rafatirah, Avesta Sasan, Houman Homayoun, **"System and Architecture Level Characterization of Big Data Applications on Big and Little Core Server Architectures,"** 2015 IEEE International Conference on Big Data (Big Data 2015): 85-94, Santa Clara, CA, USA, October 29 - November 1, 2015

Peizhao Ou, Brian Demsky, **"AutoMO: Automatic Inference of Memory Order Parameters for C/C++11"** ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2015): 221-240, Pittsburgh, PA, USA, October 25-30, 2015

Brian Demsky, Patrick Lam, **"SATCheck: SAT-Directed Stateless Model Checking for SC and TSO,"** ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2015): 20-36, Pittsburgh, PA, USA, October 25-30, 2015

Jun Na, Kwei-Jay Lin, Zhenqiu Huang, Sen Zhou, **"An Evolutionary Game Approach on IoT Service Selection for Balancing Device Energy Consumption,"** The 12th IEEE International Conference on e-Business Engineering (ICEBE 2015): 331-338, Beijing, China, October 23-25, 2015

Steffen Peter, Farshad Momtaz, Tony Givargis, **"From the Browser to the Remote Physical Lab: Programming Cyber-Physical Systems,"** 2015 IEEE Frontiers in Education Conference (FIE 2015): 1-7, El Paso, TX, USA, October 21-24, 2015

Alex D. Edgcomb, Frank Vahid, Roman L. Lysecky, **"Students Learn More with Less Text That Covers the Same Core Topics,"** 2015 IEEE Frontiers in Education Conference (FIE 2015): 1-5, El Paso, TX, USA, October 21-24, 2015

Alex D. Edgcomb, Frank Vahid, **"How Many Points Should Be Awarded for Interactive Textbook Reading Assignments,"** 2015 IEEE Frontiers in Education Conference (FIE 2015): 1-4, El Paso, TX, USA, October 21-24, 2015

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## Publications

- | Author, Title, Publication   | Conference Proceedings |
|--|------------------------|
| Jun Luan, Seungjae Lee, Pai H. Chou, " <b>Fast Compressive Sensing Based on Dominant Frequency Estimation</b> ," 12th IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS 2015): 454-455, Dallas, TX, USA, October 19-22, 2015   |                        |
| Mohammad Khavari Tavana, Divya Pathak, Mohammad Hossein Hajkazemi, Maria Malik, Ioannis Savidis, Houman Homayoun, " <b>Realizing Complexity-Effective On-Chip Power Delivery for Many-Core Platforms by Exploiting Optimized Mapping</b> ," The 33rd IEEE International Conference on Computer Design (ICCD 2015): 581-588, New York City, NY, USA, October 18-21, 2015                          |                        |
| Garo Bournoutian, Alex Orailoglu, " <b>Mobile Ecosystem Driven Application-Specific Low-Power Control Microarchitecture</b> ," The 33rd IEEE International Conference on Computer Design (ICCD 2015): 720-727, New York City, NY, USA, October 18-21, 2015   |                        |
| Paul Otto, Maria Malik, Nima Akhlaghi, Rebel Sequeira, Houman Homayoun, Siddhartha Sikdar, " <b>Power and Performance Characterization, Analysis and Tuning for Energy-Efficient Edge Detection on Atom and ARM Based Platforms</b> ," The 33rd IEEE International Conference on Computer Design (ICCD 2015): 479-482, New York City, NY, USA, October 18-21, 2015                               |                        |
| Maria Malik, Houman Homayoun, " <b>Big Data on Low Power Cores: Are Low Power Embedded Processors a Good Fit for the Big Data Workloads?</b> " The 33rd IEEE International Conference on Computer Design (ICCD 2015): 379-382, New York City, NY, USA, October 18-21, 2015   |                        |
| Mohammad Hossein Hajkazemi, Mohammad Khavari Tavana, Houman Homayoun, " <b>Wide I/O or LPDDR? Exploration and Analysis of Performance, Power and Temperature Trade-Offs of Emerging DRAM Technologies in Embedded MPSoCs</b> ," The 33rd IEEE International Conference on Computer Design (ICCD 2015): 62-69, New York City, NY, USA, October 18-21, 2015  |                        |
| N. Asokan, Franz Ferdinand Brasser, Ahmad Ibrahim, Ahmad Reza Sadeghi, Matthias Schunter, Gene Tsudik, Christian Wachsmann, " <b>SEDA: Scalable Embedded Device Attestation</b> ," The 22nd ACM SIGSAC Conference on Computer and Communications Security (CCS 2015): 964-975, Denver, CO, USA, October 12-16, 2015  |                        |
| Mauro Conti, Stephen Crane, Lucas Davi, Michael Franz, Per Larsen, Marco Negro, Christopher Liebchen, Mohaned Quanibit, Ahmad-Reza Sadeghi, " <b>Losing Control: On the Effectiveness of Control-Flow Integrity under Stack Attacks</b> ," The 22nd ACM SIGSAC Conference on Computer and Communications Security (CCS 2015): 952-963, Denver, CO, USA, October 12-16, 2015                      |                        |
| Stephen J. Crane, Stijin Volckaert, Felix Schuster, Christopher Liebchen, Per Larsen, Lucas Davi, Ahmad-Reza Sadeghi, Thorsten Holz, Bjorn De Sutter, Michael Franz, " <b>It's a TRaP: Table Randomization and Protection Against Function-Reuse Attacks</b> ," The 22nd ACM SIGSAC Conference on Computer and Communications Security (CCS 2015): 243-255, Denver, CO, USA, October 12-16, 2015 |                        |

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# PUBLICATIONS

## Author, Title, Publication

## Conference Proceedings

Sky Faber, Ronald Petric, Gene Tsudik, **"UnLinked: Private Proximity-Based Off-Line OSN Interaction,"** the 14th ACM Workshop on Privacy in the Electronic Society (WPES@CCS 2015): 121-131, Denver, Colorado, USA, October 12, 2015

Michael Franz, **"From Fine Grained Code Diversity to JIT-ROP to Execute-Only Memory: The Cat and Mouse Game Between Attackers and Defenders Continues,"** The Second ACM Workshop on Moving Target Defense (MTD@CCS 2015): 1, Denver, Colorado, USA, October 12, 2015

Chen-Ying Hsieh, Jurn-Gyu Park, Nikil D. Dutt, Sung-Soo Lim, **"Memory-Aware Cooperative CPU-GPU DVFS Governor for Mobile Games,"** The 13th IEEE Symposium on Embedded Systems for Real-time Multimedia (ESTImedia 2015): 1-8, Amsterdam, The Netherlands, October 8-9, 2015

Sajjad Taheri, Laleh Aghababaie Beni, Alexander V. Veidenbaum, Alexandru Icolau, Rosario Cammarota, Jianlin Qiu, Qiang Lu, Mohammad R. Rhghighat, **"WebRTCbench: A Benchmark for Performance Assessment of WebRTC Implementations,"** The 13th IEEE Symposium on Embedded Systems for Real-time Multimedia (ESTImedia 2015): 1-7, Amsterdam, The Netherlands, October 8-9, 2015

Tom Spring, Steffen Peter, Tony Givargis, **"Fuzzy Logic Based Adaptive Hierarchical Scheduling for Periodic Real-Time Tasks,"** The Embedded Operating System Workshop - Embed with Linux 2015 (EWiLi 2015), Amsterdam, The Netherlands, October 8, 2015

Ahmed Nassar, Fadi J. Kurdahi, Wael M. Elsharkasy, **"NUVA: Architectural Support for Runtime Verification of Parametric Specifications over Multicores,"** 2015 International Conference on Compilers, Architecture and Synthesis for Embedded Systems (CASES 2015): 137-146, Amsterdam, The Netherlands, October 4-9, 2015

Tiago Muck, Santanu Sarma, Nikil Dutt, **"Run-DMC: Runtime Dynamic Heterogeneous Multicore Performance and Power Estimation for Energy Efficiency,"** 2015 International Conference on hardware/Software Codesign and System Syntheses (CODES+ISSS 2015): 173-182, Amsterdam, Netherlands, October 4-9, 2015

Mohammad Abdullah Al Faruque, Francesco Regazzoni, Miroslav Pajic, **"Design Methodologies for Securing Cyber-Physical Systems,"** 2015 International Conference on hardware/Software Codesign and System Syntheses (CODES+ISSS 2015: 30-36), Amsterdam, Netherlands, October 4-9, 2015

Lu Fang, Khanh Nguyen, Guoqing (Harry) Xu, Brian Demsky, Shan Lu, **"Interruptible Tasks: Treating Memory Pressure as Interrupts for Highly Scalable Data-Parallel Programs,"** The 25th Symposium on Operating Systems Principles (SOSP 2015): 394-409, Monterey, CA, USA, October 4-7, 2015

Khanh Nguyen, Lu Fang, Guoqing (Harry) Xu, Brian Demsky, **"Speculative Region-based Memory Management for Big Data Systems,"** The 8th Workshop on Programming Languages and Operating Systems (PLOS@SOSP 2015): 27-32, Monterey, CA, USA, October 4, 2015

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# PUBLICATIONS

- | Author, Title, Publication   | Conference Proceedings |
|--|------------------------|
| Avik Dayal, Yi Deng, Sandeep K. Shukla, <b>"Design of Cyber Security for Critical Infrastructures: A Case for a Schizoid Design Approach,"</b> The 5th International Conference - Security, Privacy, and Applied Cryptography Engineering (SPACE 2015): 41-54, Jaipur, India, October 3-7, 2015  |                        |
| Cesar Ghali, Marc A. Schlosberg, Gene Tsudik, Christopher A. Wood, <b>"Interest-Based Access Control for Content Centric Networks,"</b> The 2nd International Conference on Information-Centric Networking (ICN 2015):147-156, San Francisco, CA, USA, September 30 - October 2, 2015 ( <b>Best Paper award</b> )  |                        |
| Cesar Ghali, Ashok Narayanan, David Oran, Gene Tsudik Christopher A. Wood, <b>"Secure Fragmentation for Content-Centric Networks,"</b> The 14th IEEE International Symposium on Network Computing and Applications (NCA 2015): 47--56, Cambridge, MA, USA, September 28-30, 2015   |                        |
| Pooria M. Yaghini, Ashkan Eghbal, Siavash S. Yazdi, Nader Bagherzadeh, <b>"Accurate System-level TSV-to-TSV Capacitive Coupling Fault Model for 3D-NoC.,"</b> The 9th International Symposium on Network-on-Chip (NOCS 2015), Vancouver, BC, Canada, September 28-30, 2015   |                        |
| Michael T. Goodrich, Timothy Johnson, Manuel Torres, <b>"Knuthian Drawings of Series-Parallel Flowcharts,"</b> The 23rd International Symposium - Graph Drawing and Network Visualization (GD 2015):556-557, Los Angeles, CA, USA, September 24-26, 2015   |                        |
| Jean-Pierre Talpin, Pierre Jouvelot, Sandeep Kumar Shukla, <b>"Towards Refinement Types for Time-Dependent Data-Flow Networks,"</b> ACM/IEEE International Conference on Formal Methods and Model for Codesign (MEMOCODE 2015): 36-41, Austin, TX, USA, September 21-23, 2015  |                        |
| Philipp Ittershagen, Kim Gruttner, Wolfgang Nebel, <b>"Mixed-Criticality System Modeling with Dynamic Execution Mode Switching,"</b> 2015 Forum on Specification and Design Languages (FDL 2015): 116-121, Barcelona, Spain, September 14-16, 2015   |                        |
| Anastasia Shuba, Anh Le, Minas Gjoka, Janus Varmarken, Simon Langhoff, Athina Markopoulou, <b>"AntMonitor: Network Traffic Monitoring and Real-Time Prevention of Privacy Leaks in Mobile Devices,"</b> The 2015 Workshop on Wireless of the Students, by the Students & for the Students, S3@MobiCom 2015): 25-27, Paris, France, September 11, 2015    |                        |
| Anastasia Shuba, Anh Le, Minas Gjoka, Janus Varmarken, Simon Langhoff, Athina Markopoulou, <b>"Demo: AntMonitor: Network Traffic Monitoring and Real-Time Prevention of Privacy Leaks in Mobile Devices,"</b> The 2015 Workshop on Wireless of the Students, by the Students & for the Students, S3@MobiCom 2015): 22, Paris, France, September 11, 2015 |                        |
| Jiang Wan, Arquimedes Candedo, Mohammad Abdullah Al Faruque, <b>"Model-Based Design of Time-Triggered Real-Time Embedded Systems for Industrial Automation,"</b> The 20th IEEE Conference on Emerging Technologies & Factory Automation (ETFA 2015): 1-6, Luxembourg, September 8-11, 2015   |                        |



# PUBLICATIONS

- | Author, Title, Publication  | Conference Proceedings  |
|---|---|
| Jiang Wan, Arquimedes Candedo, Mohammad Abdullah Al Faruque, <b>"Security-aware Functional Modeling of Cyber-Physical Systems"</b>  | The 20th IEEE Conference on Emerging Technologies & Factory Automation (ETF A 2015): 1-4, Luxembourg, September 8-11, 2015  |
| Gülfem Savrun-Yeniceri, Michael L. Van de Vanter, Per Larsen, Stefan Brunthaler, Michael Franz, <b>"An Efficient and Generic Event-based Profiler Framework for Dynamic Languages,"</b>                 | The Principles and Practices of Programming on the Java Platform (PPPJ 2015): 102-112, Melbourne, FL, USA, September 8-11, 2015                                       |
| Abinesh Ramakrishnan, Cedric Westphal, Athina Markopoulou, <b>"An Efficient Delivery Scheme for Coded Caching,"</b>   | The 27th International Teletraffic Congress (ITC 2015): 46-54, Ghent, Belgium, September 8-10, 2015   |
| Anastasia Shuba, Anh Le, Minas Gjoka, Janus Varmarken, Simon Langhoff, Athina Markopoulou, <b>"Demo: AntMonitor: A System for Mobile Traffic Monitoring and Real-Time Prevention of Privacy Leaks,"</b> | The 21st Annual International Conference on Mobile Computing and Networking (MobiCom 2015): 170-172, Paris, France, September 7-11, 2015                              |
| Volkan Gunes, Tony Givargis, <b>"XGRID: A Scalable Many-Core Embedded Processor,"</b>   | The 12th IEEE International Conference on Embedded Software and Systems (ICESS 2015): 1143-1146, New York, NY, USA, August 24-26, 2015                                |
| Volkan Gunes, Steffen Peter, Tony Givargis, <b>"Improving Energy Efficiency and Thermal Comfort of Smart Buildings with HVAC Systems in the Presence of Sensor Faults,"</b>                             | The 12th IEEE International Conference on Embedded Software and Systems (ICESS 2015): 945-950, New York, NY, USA, August 24-26, 2015                                  |
| Nga Dang, Eli Bozorgzadeh, Moonju Park, <b>"Multi-level QoS Support with Variable Window Size in Weakly Hard Real-Time Systems,"</b>  | 2015 IEEE 3rd International Conference on Cyber-Physical Systems, Networks, and Applications (CPSNA 2015): 25-30, Kowloon, Hong Kong, China, August 19-21, 2015       |
| Anh Le, Janus Varmarken, Simon Langhoff, Anastasia Shuba, Minas Gjoka, Athina Markopoulou, <b>"AntMonitor: A System for Monitoring from Mobile Device,"</b>   | the 2015 ACM SIGCOMM Workshop on Crowdsourcing and Crowdfunding of Big (Internet) Data (C2B(I)D@SIGCOMM 2015): 15-20, London, United Kingdom, August 17, 2015         |
| Aditi Majumder, Duy-Quoc Lai, Mahdi Abbaspour Tehrani, <b>"A Multi-Projector Display System of arbitrary Shape, Size and Resolution,"</b>   | Special Interest Group on Computer Graphics and Interactive Techniques Conference (SIGGRAPH Emerging Technologies 2015): 2:1, Los Angeles, CA, USA, August 9-13, 2015 |

# PUBLICATIONS

## Author, Title, Publication

## Conference Proceedings

David Eppstein, J. Michael McCarthy, Brian E. Parrish, "**Rooted Cyce Bases**," The 14th International Symposium - Algorithms and Data Structures (WADS 2015): , Victoria, BC, Canada, August 5-7, 2015

Kevin Boos, Ardalan Amiri Sani, Lin Zhong, "**Eliminating State Entanglement with Checkpoint-Based Virtualization of Mobile OS Services**," The 6th Asia-Pacific Workshop on Systems (APSys 2015): 20:1-20:8, Tokyo, Japan, July 27-28, 2015

Jie Tang, Chen Liu, Jean-Luc Gaudiot, "**How can Garbage Collection be Energy Efficient by Dynamic Offloading?**" The 26th IEEE International Conference on Application-Specific Systems, Architectures and Processors (ASAP 2015): 156-157, Toronto, ON, Canada, July 27-29, 2015

Korosh Vatanparvar, Jiang Wan, Mohammad Abdullah Al Faruque, "**Battery-Aware Energy-Optimal Electric Vehicle Driving Management**," IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED 2015): 353-358, Rome, Italy, July 22-24, 2015

Jun Luan, Seungjae Lee, Pai H. Chou, "**Low-Power Detection of Sternocleidomastoid Muscle Contraction for Asthma Assessment and Control**," IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED 2015): 183-188, Rome, Italy, July 22-24, 2015

Zhi Chen, Ryoichi Inagaki, Alexandru Nicolau, Alexander V. Veidenbaum, "**Software Fault Tolerance for FPUs via Vectorization**," 2015 International Conference on Embedded Computer Systems: Architectures, Modeling, and Simulation (SAMOS 2015): 203-210, Samos, Greece, July 19-23, 2015

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