CECS eNEWS

Highlights

- **CECS Name Change**

- **WorldComp 2014**

- **Postdoc Profile:**
  Alireza Bebahani

- **Visitor Profile:**
  Ihsen Alouani

CECS Name Change

CECS Director, Prof. Fadi Kurdahi is pleased to announce the name change of the Center for Embedded Computer Systems to the Center for Embedded and Cyber-Physical Systems, with a new logo. The abbreviation CECS will remain the same. The Academic Senate Council on Research, Computing and Libraries (CORCL) at its meeting on May, 15, 2014, voted unanimously in support of the proposed name change, with final approval from the Vice Chancellor of Research, Dr. John C. Hemminger on his memo dated June 26, 2014.

In the past 14 years, the Center's focus has been on the engineering and science of generic embedded systems. As the decade progresses, it is imperative that we move forward to address domain-specific issues and the scale-up in complexity introduced by what is referred to today as Cyber-Physical Systems (CPS). "The name change is an appropriate reflection of the Center's new direction of connecting the networked computational resources with physical systems," said CECS Director, Prof. Fadi Kurdahi.

CECS at WorldComp/FECS '14

Quoc-Viet Dang

WORLDCOMP'14
**July 21-24 | Las Vegas, Nevada, USA**
The 2014 World Congress in Computer Science Computer Engineering and Applied Computing

Between July 21-24, I attended WorldComp'14 in Las Vegas, NV. The "World Congress" covers many smaller conferences in the areas of Computer Science, Computer Engineering, and Applied Computing. They were all held simultaneously at the Monte Carlo Hotel.

This year, the keynote speeches for the conferences covered "Smart Data for You and Me: Personalized and Actionable Physical Cyber Social Big Data" by Prof. Sheth of Wright State University, Ohio, "Visualization and Data Mining for High Dimensional Datasets" by Prof. Inselberg of Tel Aviv University, Israel, and "Big Data Analytics Cognitive Algorithms" by Prof. Perlovsky of Harvard University, Massachusetts.

WorldComp and Postdoc Profile

WorldComp 2014 (continued from page 1)...
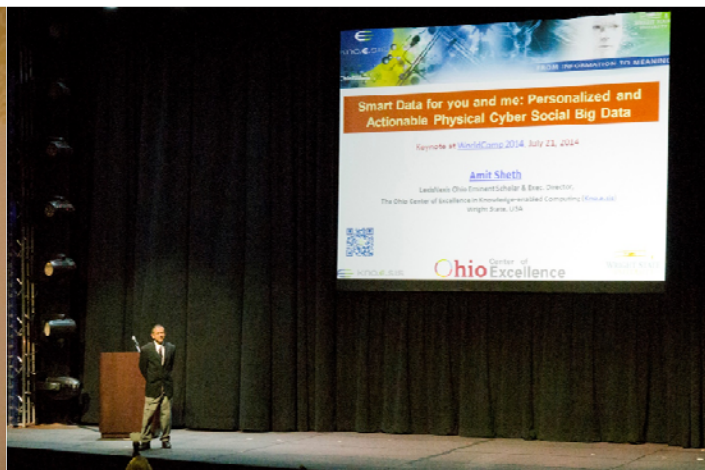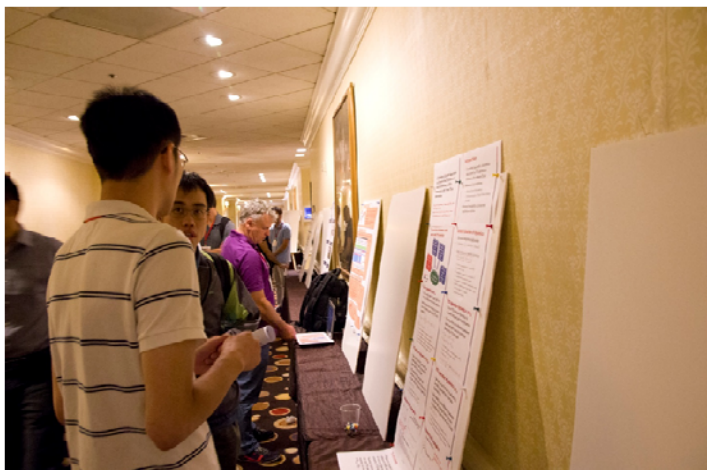
Prof. Sheth's talk was particularly interesting, as it brought some new light on Big Data and the research we are currently conducting on storing and searching through large sets of content for an Engineering course. The main objective presented was to not only be able to access lots of data, but to turn it into something useful, hence the name "Smart Data". The problems and issues facing researchers in this field are very similar to the issues we have been facing with properly analyzing and presenting the content from a typical course where there may be 100+ videos, a course book, and a lot of generated content through messageboards and other media.

Prof. Inselberg's talk presented alternative visual ways to analyze data which lead to many unique examples that were not immediately apparent with traditional analysis methods. Prof. Perlovsky's talk presented the idea of creating algorithms based on cognitive science that mimic brain activity.

There were also several tutorials, including energy-aware computing as well as cyber security and e-Learning tools. During breaks, we were able to discuss current research with grad students from many different universities during their poster sessions.

The specific conference I attended was The 2014 Frontiers in Education: Computer Engineering and Computer Science (FECS'14), where I presented our ongoing research in e-Learning research conducted under Dr. Gajski.

Postdoc Profile

Alireza S. Behbahani (sshahanb@uci.edu)

Alireza Shahan Behbahani received his B.S. from Tehran Polytechnic in 1992, M.S.
from K.N.Toosi University of Technology in 1996, and his Ph.D. in 2009 from University of California, Irvine (UCI) all in Electrical Engineering. From 1996 to 2002 he was involved in the design and implementation of wired and wireless LANs, MANs, and WANs. He was a consultant for design, planning, installation and integration of enterprise systems. He has Cisco CCNA and CCNP certificates. He is currently a postdoctoral scholar at University of California, Irvine.

Postdoc and CECS Vistors

Alireza Behbahani (continued from page 2)...

His research interests lie in the general areas of signal processing, communication theory, wireless sensor networks, estimation/detection. His main interests are applications that require an interdisciplinary approach, where expertise in a range of subjects is an advantage. Broadly speaking, his research interest belongs to the area of applying signal processing techniques to wireless communications, mathematical modeling, power loading, estimation/detection, and biomedical.

He is currently working on wireless sensor networks and distributed systems with and without fusion center. As a Postdoctoral scholar, he has been involved in different research projects and collaborated with different research groups. He has been supervising several Master and Ph.D. students. He has also been working with graduate students to create a wireless sensor network testbed for implementing distributed algorithms. Furthermore, He has written and been involved in writing several proposals with Professor Ahmed Eltawil.

CECS Visitors

On June 25, 2014, CECS Director, Professor Fadi Kurdahi met with Ted Purinton, the Associate Provost for Strategic Initiatives and Associate Dean Graduate School of Education at the American University in Cairo, to discuss future collaboration between two universities. Their meeting was followed by the luncheon at University Club with HSSoE administrators and faculty.

Nadia Ghabriel Moufarrej, the Coordinator of FEA Career Development Center, Faculty of Engineering and Architecture at the American University of Beirut visited the Center on Tuesday, June 24, 2014, to meet with CECS Director, Prof. Fadi Kurdahi. She also attended the Orientation hosted by the SAU Summer Program to welcome the new students from Saudi Arabia and China. Later, she met with Dr. Lily Wu, the Director of Academic Innovation programs at the Henry Samueli School of Engineering to discuss educa-

Visitors cont.

The President of Salman bin Abdulaziz University, Dr. Abdul Rahman bin Mohammed Al-Asmi visited CECS on Tuesday, June 17, 2014. CECS Director, Professor Fadi Kurdahi, and SAU Program Director, Prof. Ahmed Eltawil, gave a presentation about the Center. He also toured the campus and visited various Engineering labs. Salman bin Abdulaziz University has been partnered with UCI's Henry Samueli School of Engineering to establish the inaugural Saudi Arabia International Program (SAIP) in 2012. The summer training program is designed as a 10-week intensive program that offers undergraduate students with an opportunity to work with HSSoE faculty on engineering projects, while simultaneously receiving extensive English language training through UCI Extension. Salman bin Abdulaziz University is located in Al-Kharj, Saudi Arbia, the school is home to over 1300 academic staff and over 9000 students.

Dr. Kim Gruettner was the guest speaker for the talk on June 3, 2014, entitled "Considering Variation and Aging in a Full Chip Design Methodology at System Level". Dr. Gruettner is the Group Manager for Hardware/Software Design Methodology at OFFIS and a lecturer at the University of Oldenburg in Germany. His research interests include electronic design automation, design methodologies, system-level design, object-oriented modeling, high-level synthesis. His talk is hosted by Prof. Rainer Doemer.

Dr. Masahiro Fujita, a longtime research collaborator with CECS, came to UCI on April 14, 2014, to visit Prof. Rainer Doemer's lab and gave a talk titled "Efficient SAT-based ATPG techniques for all multiple stuck-at faults". He is a Professor in VLSI Design and Education Center (VDEC) in the Department of Electronics Engineering at the University of Tokyo in Japan. His current research interests include synthesis and verification in higher level design stages, hardware/software co-designs and also digital/analog co-designs.

Visitor Profile

Visitor Profile: Ihsen Alouani

Ihsen Alouani is a second year PhD student in LAMIH lab in the University of Valenciennes in France. He graduated from the School of Engineering of Sousse in Tunisia and received his Master's degree in Microelectronics in collaboration with the University of Valenciennes, France and the School of Engineering of Sousse, Tunisia in 2012. In summer 2012, he was a visiting researcher at Texas A&M University at Qatar (TAMUQ) where he worked in a
project for developing a DSP-based reconfigurable coprocessor linked to Microblaze soft processor tested on the Virtex-6 FPGA board. During the first semester of 2013-2014, he was a teacher assistant at the Computer Science Department in the University of Valenciennes, where he assisted in preparing materials and labs for different courses such as computer architecture, assembly programming and cache memory.

His previous research experience includes simulation of the processor datapath and the impact of soft errors on it, the design of error mitigation techniques for both memory and logic sides and FPGA implementations of digital signal processing systems.

He is now a visiting researcher working with Pr Fadi Kurdahi on a study of the power consumption and reliability aspects of a pulsed-latch based register file.

Publications

Publications

The following papers were published by CECS affiliates between
April 2014 through August 2014 (and unreported papers from previous eNews).

Author, Title, Publication   **Conference Proceedings**

Filippo Seracini, Xiang Zhang, Tajana Rosing, Ingolf Krüger, **"A Proactive Customer-Aware Resource Allocation Approach for Data Centers,"** IEEE International Symposium on Parallel and Distributed Processing with Applications (ISPA 2014):26-33, Milan, Italy, August 26-28, 2014

Pietro Mercati, Andrea Bartolini, Francesco Paterna, Luca Benini, Tajana Simunic Rosing,**" An Online Reliability Emulation Framework,"** The 12th IEEE International Conference on Embedded and Ubiquitous Computing (EUC 2014), Milano, Italy, August 26-28, 2014

Henrique Rodrigues, Inder Monga, Abhinava Sadasivarao, Sharfuddin Syed, Chin Guok, Eric Pouyoul, Chris Liou, Tajana Rosing, **"Traffic Optimization in Multi-layered WANs Using SDN,"** The 22nd IEEE Annual Symposium on High-Performance Interconnects (HOTI 2014):71-78, Mountain View, CA, USA, August 26-28, 2014

Jeff Burke, Paolo Gasti, Naveen Nathan, Gene Tsudik**, "Secure Sensing Over Named Data Networking,"** IEEE 13th International Symposium on Network Computing and Applications (NCA 2014):175-180, Cambridge, MA, USA, August 21-23, 2014

Volkan Gunes, Tony Givargis, **"XGRID: A Scalable Many-Core Embedded processor,"** IEEE International Conference on Embedded Software and Systems (ICESS), Paris, France, August 20-22, 2014

Sehwan Kim, Minseok Lee, Pai H. Chou, **"Energy Harvesting from Anti-Corrosion Power Sources,"** International Symposium on Low Power Electronics and Design (ISLPED'14):363-368, La Jolla, CA, USA, August 11-13, 2014

Mohammad Khavari Tavana, Amey M. Kulkarni, Abbas Rahimi, Tinoosh Mohsenin, Houman Homayoun, **"Energy-Efficient Mapping of Biomedical Applications on Doman-specific Accelerator under Process Variation,"** International Symposium on Low Power Electronics and Design (ISLPED'14):363-368, La Jolla, CA, USA, August 11-13, 2014

Mohammad Khavari Tavana, Amey M. Kulkarni, Abbas Rahimi, Tinoosh Mohsenin, Houman Homayoun**, "Energy-efficient Mapping of Biomedical Applications on Domain-specific Accelerator under Process Variation,"** International Symposium on Low Power Electronics and Design (ISLPED'14):275-278, La Jolla, CA, USA, August 11-13, 2014

Reef Eilers, Malte Metzdorf, Domenik Helms, Wolfgang Nebel, **"Efficient NBTI Modeling Techique Considering Recovery Effects,"** International Symposium on Low Power Electronics and Design (ISLPED'14):177-182, La Jolla, CA, USA, August 11-13, 2014

PUBLICATIONS

Publications

Author, Title, Publication   **Conference Proceedings**

Chenchen Fu, Mengying Zhao, Chun Jason Xue, Alex Orailoglu, **"Sleep-Aware Variable Partitioning for Energy-Efficient Hybrid PRAM and DRAM Main Memory,"** International Symposium on Low Power Electronics and Design (ISLPED'14):75-80, La Jolla, CA, USA, August 11-13, 2014

Howard Jay Siegel, Bhavesh Khemka, Ryan Friese, Sudeep Pasricha, Anthony A. Maciejewski, Gregory A. Koenig, Sarah Powers, Marcia Hilton, Rajendra Rambharos, Gene Okonski, Steve Poole, **"Energy-aware Resource Management for Computing Systems,"** The 7th International Conference on Contemporary Computing (ICS 2014):7-12, Noida, India, August 7-9, 2014

Kyoungwon Kim, Daniel Gajski, **"Hierarchy-Aware Mapping of Pipelined Applications,"** IEEE 57th International Midwest Symposium on Circuits and Systems (MWSCAS 2014), College Station, Texas, USA, August 3-6, 2014

Kyoungwon Kim, Daniel Gajski, **"Trace-Driven Performance Estimation of Multi-core Platforms,"** IEEE 57th International Midwest Symposium on Circuits and Systems (MWSCAS 2014), College Station, Texas, USA, August 3-6, 2014

Tayfun Gezgin, Stefan Henkler, Ingo Stierand, Achim Rettberg, **"Evaluation of a State-based Real-time Scheduling Analysis Technique,"** "The 12th IEEE International Conference on Industrial Informatics (INDIN 2014):158-163, Porto Alegre, RS, Brazil, July 27-30, 2014

Markus Oertel, Sebastian Gerwinn, Achim Rettberg, **"Simulative Evaluation of Contract-based Change Management,"** The 12th IEEE International Conference on Industrial Informatics (INDIN 2014):16-21, Porto Alegre, RS, Brazil, July 27-30, 2014

Quoc-Viet Dang, Daniel Gajski, **"Creating an Automated Learning Management Tool in an Engineering Course Based on Interdisciplinary Metrics,"** The 2014 International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS'14), Las Vegas, NV, USA, July 21-24, 2014

Milovan Duric, Oscar Palomar, Asron Smith, Milan Stanic, Osman S. Unsal, Adrian Cristal, Mateo Valero, Doug Bruger, Alexander V. Vendenbaum, **"Dynamic-vector Execution on a General Purpose EDGE Chip Multiprocessor,"** XIVth International Conference on Embedded Computer Systems: Architectures, Modeling, and Simulation (SAMOS 2014):18-25, Agios, Konstantinos, Samos, Greece, July 14-17, 2014

PUBLICATIONS

The following papers were published by CECS affiliates between April 2014 through August 2014 (and unreported papers from previous eNews) - continued from page 7...

Derrik E. Asher, Jeffrey L. Krichmar, Nicolas Oros, **"Evolution of Biologically Plausible Neural Networks Performing a Visually Guided Reaching Task,"** Genetic and Evolutionary Computation Conference, Vancouver, BC, Canada, July 12-16, 2014

Olga Ohrimenko, Michael T. Goodrich, Roberto Tamassia, Eli Upfal, **"The Melbourne Shuffle: Improving Oblivious Storage in the Cloud,"** Automata, Languages, and Programming - 41st International Colliquium (ICALP 2014)2:556-567, Copenhagen, Demark, July 8-11, 2014

David Eppstein, Michael T. GOodrich, Michael Mitzenmacher, Pawel Pszona**, "Wear Minimization for Cuckoo Hashing: How Not to Throw a Lot of Eggs into One Basket,"** Experimental Algorithms - 13th International Symposium (SEA 2014):162-173, Copenhagen, Denmark, June 29-July 1, 2014

Muhammad Abdullah Adnan, Rajesh Gupta, **"Workload Shaping to Mitigate Variability in Renewable Power Use by Data Centers,"** The 7th IEEE International Conference on Cloud Computing (IEEE CLOUD 2014):96-103, Anchorage, Alaska, USA, June 27-July 2, 2014

Hans-Juergen Boehm, Brian Demsky, **"Outlawing Ghosts: Avoiding out-of-thin-air Results,"** The Workshop on Memory Systems Performance and Correctness (MSPC'14), Edinburgh, United Kingdom, June 13, 2014

Loi Luu, Shweta Shinde, Prateek Saxena, Brian Demsky, **"A Model Counter for Constraints Over Unbounded Strings,"** The ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI'14), Edinburgh, United Kingdom, June 9-11, 2014

Moreno Ambrosin, Mauro Conti, Paolo Gasti, Gene Tsudik, **"Covert Ephemeral Communication in Named Data Networking,"** The 9th ACM Symposium on Information, Computer and Communications Security (ASIA CCS'14):15-26, Kyoto, Japan, June 3-6, 2014

Mahesh Nanjundappa, Sandeep K. Shukla**, "Compiling Polychronous Programs into Conditional Partial Orders for ASIP Synthesis,"** the 2nd FME Workshop on Formal Methods in Software Engineering (FormaliSE 2014), Hyderabad, Inida, June 3, 2014

Kiyoshi Nakayama, Nga Dang, Lubomir Bic, Michael Dillencourt, Eli Bozorgzadeh, Nalini Venkatasubramanian, **"Distributed Flow Optimization Control for Energy-Harvesting Wireless Sensor Networks,"** IEEE International Conference on Communications (ICC), Sydney Australia, June 2014

Pooria M. Yaghini, Ashkan Eghbal, Nader Bagherzadeh, **"A GALS Router for Asynchronous Network-on-Chip,"** the 2nd International Workshop on Many-core Embedded Systems (MES 2014), Minneapolis, MN, USA, June 15, 2014, MES 2014: 52-55

PUBLICATIONS

The following papers were published by CECS affiliates between April 2014 through August 2014
(and unreported papers from previous eNews) - continued from page 8...

Tom Springer, Steffen Peter, Tony Givargis, **"Resource Synchronization in Hierarchically Scheduled Real-Time Systems using Preemptive Critical Sections,"** IEEE Workshop on Software Technologies for Future Embedded and Ubiquitous Systems (SEUS 2014), Reno, NV, USA, June 8-9, 2014

Chung-An Shen, Muhammad S. Khairy, Ahmed M. Eltawil, Fadi J. Kurdahi, **"Lowe Power Reduced-complexity Error-Resilient MIMO Detector," ,"** IEEE International Symposium on Circuits and Systems (ISCAS 2014):1688-1691, Melbourne, Victoria, Australia, June 1-5, 2014

Aras Pirbadian, Muhammad S. Khairy, AShmed M. Eltawil, Fadi J. Kurdahi, **"State Dependent Statistical Timing Model for Voltage Scaled Circuits,"** IEEE International Symposium on Circuits and Systems (ISCAS 2014):1432-1435, Melbourne, Victoria, Australia, June 1-5, 2014

Vasileios Kontorinis, Mohammad Khavari Tavana, Mohammad H. Hakazemi, Dean M. Tullsen, Houman Homayoun, **"Enabling Dynamic Heterogeneity Through Core-on-Core Stacking,"** The 51st Annual Design Automation Conference 2014 (DAC'14), San Francisco, CA, USA, June 1-5, 2014, DAC 2014: 1-6

Abbas Rahimi, Amirali Ghofrani, Miguel Angel Lastras-Montano, Kwang-Ting Cheng, Luca Benini, Rajesh K. Gupta, **"Energy-Efficient GPGPU Architectures via Collaborative Compilation and Memristive Memory-Based Computing,"** The 51st Annual Design Automation Conference 2014 (DAC'14), San Francisco, CA, USA, June 1-5, 2014, DAC 2014: 1-6

Nikil Dutt, Puneet Gupta, Alex Nicolau, Abbas BanaiyanMofrad, Mark Gottscho, Majid Shoushtari, **"Multi-Layer Memory Resiliency,"** The 51st Annual Design Automation Conference 2014 (DAC'14), San Francisco, CA, USA, June 1-5, 2014, DAC 2014: 1-6

Mark Gottscho, Abbas BanaiyanMofrad, Nikil Dutt, Alex Nicolau, Puneet Gupta, **"Power/Capacity Scaling: Energy Savings With Simple Fault-Tolerant Caches,"** The 51st Annual Design Automation Conference 2014 (DAC'14), San Francisco, CA, USA, June 1-5, 2014, DAC 2014: 1-6

Santanu Sarma, Nalini Venkatasubramanian, Nikil Dutt, **"Sense-making from Distributed and Mobile Sensing Data: A Middleware Perspective,"** The 51st Annual Design Automation Conference 2014 (DAC'14), San Francisco, CA, USA, June 1-5, 2014, DAC 2014: 1-6

Moreno Ambrosin, Mauro Conti, Paolo Gasti, Gene Tsudik, "**Covert Ephemeral Communication in Named Data Networking,"** The 9th ACM Symposium on Information, Computer and Communications Security (ASIA CCS'14), Kyoto, Japan, June 3-6, 2014

Liam D. Bucci, Ting-Shuo Chou, Jeffrey L. Krichmar, **"Sensory Decoding in a Tactile, Interactive Neurorobot,"** 2014 IEEE International Conference on Robotics & Automation (ICRA), Hong Kong, China, May 31-June 7, 2014

PUBLICATIONS

The following papers were published by CECS affiliates between April 2014 through August 2014
(and unreported papers from previous eNews) - continued from page 9...

Michael T. Goodrich, **"Zig-zag Sort: A Simple Deterministic Data-Oblivious Sorting Alogorithm Running in O(n log n) time,"** Symposium on Theory of Computing (STOC 2014), New York, NY, USA, May 31-June 3, 2014, STOC 2014: 684-693

Amey M. Kulkarni, Houman Homayoun, Tinoosh Mohsenin, **"A Parallel and Reconfigurable Architecture for Efficient OMP Compressive Sensing Reconstruction,"** ACM Great Lakes Symposium on VLSI (GLSVLSI'14), Houston, TX, USA, May 21-23, 2014, GLSVLSI 2014: 299-304

Adarsh Reddy Ashammagari, Hamid Mahmoodi, Tinoosh Mohsenin, Houman Homayoun, **"Reconfigurable STT-NV LUT-based Functional Units to Improve Performance in General-Purpose Processors,"** ACM Great Lakes Symposium on VLSI (GLSVLSI'14), Houston, TX, USA, May 21-23, 2014, GLSVLSI 2014: 249-254

Per Larsen, Andrei Homescu, Stefan Brunthaler, Michael Franz**, "SoK: Automated Software Diversity**," 35th IEEE Symposium on Security and Privacy," San Jose, CA, May 18-21, 2014

Yi Xiang, Sudeep Pasricha, **"A Hybrid Framework for Application Allocation and Scheduling in Multicore Systems with Energy Harvesting,"** ACM Great Lakes Symposium on VLSI 2014, Houston, TX, USA, May 21-23, 2014

Taesu Kim, Dali Zhao, Alexander V. Veidenbaum, **"Multiple Stream Tracker: A New Hardware Stride Prefetcher, "** Conference on Computing Frontiers (CF'14), Cagliari, Italy, May 20-22, 2014, CF'14: 34

Bhavesh Khemka, Ryan Friese, Sudeep Pasricha, Anthony A. Jaciejewski, Howard Jay Siegel, Gregory A. Koenig, Sarah owers, Marcia Hilton, Rajendra Rambharos, Steve Poole**, "Utility Driven Dynamic Resource Management in an Oversubscribed Energy-Constrained Heterogeneous System,"** IEEE International Parallel & Distributed Processing Symposium Workshops (IPDPS 2014):58-67, Phoenix, AZ, USA, May 19-23, 2014

Yi Zhang, Jingjing Wang, Dmitry V. Ponomarev, Nael B. Abu-Ghazaleh**, "Exploring Many-core Architecture Design Space for Parallel Discrete Event Simulation,"** SIGSIM Principles of Advanced Discrete Simulation (SIGSIM-PADS'14), Denver, CO, USA, May 18-21, 2014

Zhijing Qin, Grit Denker, Carlo Giannelli, Paolo Bellavista, Nalini Venkatasubramanian, **"A Software Defined Networking Architecture for the Internet-of-Things,"** 2014 IEEE Network Operations and Management Symposium (NOMS 2014), Krakow, Poland, May 5-9, 2014, NOMS 2014: 1-9

Zhijing Qin, Luca Iannario, Carlo Giannelli, Paolo Bellavista, Grit Denker, Nalini Venkatasubramanian, **"MINA: A Reflective Middleware for Managing Dynamic Multinetwork Environments,"** 2014 IEEE Network Operations and Management Symposium (NOMS 2014), Krakow, Poland, May 5-9, 2014, NOMS 2014: 1-9

Jinseok Yang, Tajana Simunic Rosing, Sameer S. Tilak, **"Leveraging Application Context for Efficient Sensing,"** 2014 IEEE 9th International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), Singapore, April 21-22, 2014

PUBLICATIONS

The following papers were published by CECS affiliates between April 2014 through August 2014 (and unreported papers from previous eNews) - continued from page 9...

Vikram P. Munishwar, Vinay Kolar, Nael B. Abu-Ghazaleh, **"Coverage in Visual Sensor Networks with Pan-Tilt-Zoom Cameras: The MaxFoV Problem,"** IEEE Conference on Computer Communications (INFOCOM'14), Toronto, Canada, April 27 - May 2, 2014.

Ashikur Rahman, Nael B. Abu-Ghazaleh, **"On the Expected Size of Minimum-energy Path-preserving Topologies for Wireless Multi-Hop Networks,"** IEEE Conference on Computer Communications (INFOCOM'14), Toronto, Canada, April 27 - May 2, 2014.

Ngoc Do, **Ye Zhao**, Shu-Ting Wang, Cheng-Hsin Hsu and Nalini Venkatasubramanian, **"Optimizing Offline Access to Online Social Networks,"** IEEE Conference on Computer Communications (INFOCOM'14), Toronto, Canada, April 27, 2014 – May 2, 2014

Jinseok Yang, Tajana Simunic Rosing, Sameer S. Tilak, **"Leveraging Application Context for Efficient Sensing,"** IEEE 9th International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP):1-6, Singapore, April 21-24, 2014

Jo-Ping Li, Shin-Yi Chang, Pai H. Chou, **"Demonstration Abstract: Enabling WSN Nodes to Send Data to Smartmobiles by Blinking LEDS,"** The 13th International Symposium on Information Processing in Sensor Networks (IPSN 2014), April 15-17, 2014, Berlin, Germany, IPSN 2014: 343-344

Tong Kun Lai, An-Ping Wang, Chun-Min Chang, Hua-Min Tseng, Kailing Huang, Jo-Ping Li, Wen-Chan Shih, Pai H. Chou, **"Demonstration abstract: an 8x8mm^2 Bluetooth Low Energy Wireless Motion-Sensing Platform,"** The 13th International Symposium on Information Processing in Sensor Networks (IPSN 2014), April 15-17, 2014, Berlin, Germany, IPSN 2014: 341-342

Rana A. Abdelaal, Alireza Shahan Behbahani, Ahmed M. Eltawil, **"On the Performance of Massive MIMO Cellular Systems with Power Amplifier,"** The 2014 Wireless Telecommunications Symposium (WTS 2014): 1-5, Washington, DC, USA, April 9-11, 2014

Rana A. Abdelaal, Alireza Shahan Behbahani, Ahmed M. Eltawil, **"On Optimizing the Performance of Interference-limited Cellular Systems,"** The 2014 Wireless Telecommunications Symposium (WTS 2014): 1-5, Washington, DC, USA, April 9-11, 2014

Matthew Anderson, Sandeep K. Shukla, **"APECS Code Synthesis: Extending Ocarina for Multi-Threaded Code Synthesis from AADL Models for Safety Critical Applications,"** 11th IEEE International Conference on Networking, Sensing and Control (ICNSC 2014), Miami, FL, USA, April 7-9, 2014

Adarsh Reddy Ashammagari, Hamid Mahmoodi, Houman Homayoun, **"Exploiting STT-NV Technology for Reconfiguarable, High Performance, Low Power, and Low Temperature Functional Unit Design,"** Design, Automation & Test in Europe Conference & Exhibition (DATE), Dresden, Germany, March 24-28, 2014, DATE 2014: 1-6

PUBLICATIONS

The following papers were published by CECS affiliates between April 2014 through August 2014 (and unreported papers from previous eNews) - continued from page 9...

Garo Bournoutian, Alex Orailoglu, **"On-Device Objective-C Application Optimization Framework for High-Performance Mobile Processors,"** Design, Automation & Test in Europe Conference & Exhibition (DATE), Dresden, Germany, March 24-28, 2014, DATE 2014: 1-6

Aurélien Fancillon, Quan Nguyen, Kasper Bonne Rasmussen, Gene Tsudik, **"A Minimalist Approach to Remote Attestation,"** Design, Automation & Test in Europe Conference & Exhibition (DATE), Dresden, Germany, March 24-28, 2014, DATE 2014: 1-6

Baris Aksanli, Tajana Rosing, **"Providing Regulation Services and Managing Data Center Peak Power Budgets,"** Design, Automation & Test in Europe Conference & Exhibition (DATE), Dresden, Germany, March 24-28, 2014, DATE 2014: 1-4

Pietro Mercati, Andrea Bartolini, Francesco Paterna, Tajana Simunic Rosing, Luca Benini, **"A Linux-Governor Based Dynamic Reliability Manger for Android Mobile Devices,"** Design, Automation & Test in Europe Conference & Exhibition (DATE), Dresden, Germany, March 24-28, 2014, DATE 2014: 1-4

Francesco Paterna, Joe Zanotelli, Tajana Simunic Rosing, **"Ambient Variation-Tolerant and Inter Components Aware Thermal Management for Mobile System on Chips,"** Design, Automation & Test in Europe Conference & Exhibition (DATE), Dresden, Germany, March 24-28, 2014, DATE 2014: 1-6

Srivats Shukla, Yi Deng, Sandeep K. Shukla, Lamine Mili, **"Construction of a Microgrid Communication Network,"** IEEE PES Innovative Smart Grid Technologies Conference (ISGT 2014) Washington, DC, USA, February 19-22, ISGT 2014: 1-5

Gŭlfem Savrun-Yeniceri, Wei Zhang, Huahan Zhang, Eric Seckler, Chen Li, Stefan Brunthaler, Per Larsen, Michael Franz, **"Efficient Hosted Interpreters on the JVM,"** ACM Transactions on Architecture and Code Optimization (TACO) 11(1): 9, February 2014

Author, Title, Publication **Journal Papers**

Nicolas Oros, Andrea A. Chiba, Douglas A. Nitz, Jeffrey L. Krichmar, **"Learning to Ignore: A Modeling Study of a Decremental Cholinergic Pathway and its Influence on Attention and Learning,"** Learning & Memory, September 2014, 21(9): 105-118

Muhammad S. Khairy, Amin Khajeh, Ahmed M. Eltawil, Fadi J. Kurdahi, **"Joint Power Management and Adaptive Modulation and Coding for Wireless Communications Systems With Unreliable Buffering Memories,"** IEEE Transactions on Circuits and Systems 61-I(8): 2456-2465, August 2014

Hulya Seferoglu, Athina Markopoulou, **"Network Coding-Aware Queue Management for TCP Flows Over Coded Wireless Networks,"** IEEE/ACM Transactions on Networking 22(4): 1297-1310, August, 2014

PUBLICATIONS

The following papers were published by CECS affiliates between April 2014 through August 2014
(and unreported papers from previous eNews) - continued from page 9...

Pegah Sattari, Maciej Kurant, Animashree Anandkumar, Athina Markopoulou, Michael G. Rabbat**," Active Learning of Multiple Source Multiple Destination Topologies,"** IEEE Transactions on Signal Processing 62(8):1926-1937, August, 2014

Brad K. Donohoo, Christ Ohlsen, Sudeep Pasricha, Yi Xiang, Charles Anderson, **"Context-Aware Energy Enhancements for Smart Mobile Devices,"** IEEE Transactions on Mobile Computing 13 (8): 1720-1732, August, 2014

Seung-Hun Kim, Sang Hyong Lee, Minje Jun, Byunghoon Lee, Won Woo Ro, Eui-Young Chung, Jean-Luc Gaudiot, **"$C\!\!-\!\!Lock$: Energy Efficient Synchronization for Embedded Multicore Systems,"** IEEE Transactions on Computers 63(8): 1962-1974, August, 2014

Hamid Mahmoodi, Sridevi Srinivasan Lakshmipuram, Manish Arora, Yashar Asgarieh, Houman Homayoun, Bill LIn, Dean M. Tullsen, **"Resistive Computation: A Critique,"** Computer Architecture Letters 13(2): 89-92, July 2014

Seung-Hun Kim, Dongmin Choi, Won Woo Ro, Jean-Luc Gaudiot, **"Complexity-Effective Contention Management with Dynamic Backoff for Transactional Memory Systems,"** IEEE Transactions on Computers 63(7): 1696-1708, July, 2014

Chen Liu, Pollawat Thanarungroj, Jean-Luc Gaudiot, **"How Many Cores Do We Need to Run a Parallel Workload: A Test Drive of the Intel SCC Platform?"** Journal of Parallel and Distributed Computing 74(7): 2582-2592, July 2014

Michael Beyeler, Micah Richert, Nikil D. Dutt, Jeffrey L. Krichmar, **"Efficient Spiking Neural Network Model of Pattern Motion Selectivity in Visual Cortex,"** Neuroinformatics 12(3): 435-454, July 2014

Muhammed S. Khairy, Chung-An Shen, Ahmed M. Eltawil, Fadi J. Kurdahi, **"Algorithms and Architectures of Energy-Efficient Error-Resilient MIMO Detectors for Memory-Dominated Wireless Communication Systems,"** IEEE Transactions on Circuits and Systems 61-I(7): 2159-2171, July 2014

Nikil D. Dutt, Mehdi Baradaran Tahoori, **"Introduction to Special Issue on Cross-layer Dependable Embedded Systems,"** ACM Transactions on Embedded Computing Systems (TECS)13(4s): 136:1-136:27, July 2014

Michael Beyeler, Micah Richert, Nikil D. Dutt, Jeffrey L. Krichmar, **"Efficient Spiking Neural Network Model of Pattern Motion Selectivity in Visual Cortex,"** Neuroinformatics 12(3): 435-454, July, 2014

Weiwei Chen, Xu Han, Che-Wei Chang, Guantao. Liu, Rainer Doemer, **"Out-of-Order Parallel Discrete Event Simulation for Transaction level Models,"** IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems," July, 2014

PUBLICATIONS

The following papers were published by CECS affiliates between April 2014 through August 2014 (and unreported papers from previous eNews) - continued from page 9...

Hai Jiang, Yi Chen, Zhi Qiao, Kuan0Ching LI, Won Woo Ro, Jean-Luc Gaudiot, **"Accelerating MapReduce Framework on Multi-GPU Systems,"** Cluster Computing 17(2): 293-301, June 2014

Arquimedes Canedo, Hartmut Ludwig, Mohammad Abdullah Al Faruque, **"High Communication Throughput and Low Scan Cycle Time with Multi-/Many-Core Programmable Logic Controllers,"** IEEE Embedded Systems Letter 6(2): 21-24, June 2014

Shaahin Angizi, Esam Alkaldy, Nader Bagherzadeh, Keivan Navi, **"Novel Robust Single Layer Wire Crossing Approach for Exclusive OR Sum of Products Logic Design with Quantum-Dot Cellular Automata, "**Journal of Low Power Electronics (JOLPE)10(2): 259-271, June 2014

Chifeng Wang, Nader Bagherzadeh, **"Design and Evaluation of a High Throughput QoS-aware and Congestion-aware Router Architecture for Network-on-Chip,"** Microprocessors and Microsystems - Embedded Hardware Design 38(4): 304-315, June 2014

Jingjing Wang, Deepak Jagtap, Nael B. Abu-Ghazaleh, Dmitry Ponomarev, **"Parallel Discrete Event Simulation for Multi-Core Systems: Analysis and Optimization,"** IEEE Transactions on Parallel Distributed Systems 25(6): 1574-1584, June 2014

Hai Jiang, Yi Chen, Zhi Qiao, Kuan0Ching Li, Won Woo Ro, Jean-Luc Gaudiot, **"Accelerating MapReduce Framework on Multi-GPU Systems,"** Cluster Computing 17(2):293-301, June, 2014

Amy M. Kulkarni, Houman Homayoun, Tinoosh Mohsenin, **"A Parallel and Reconfigurable Architecture for Efficient OMP Compressive Sensing Reconstruction,"** ACM Great Lakes Symposium on VLSI 2014:299-304, Houston, TX, USA, May 21-23, 2014

Adarsh Reddy Ashammagari, Hamid Mahmoodi, Tinoosh Mohsenin, Houman Homayoun," **Reconfigurable STT-NV LUT-based Functional Units to Improve Performance in General-purpose Processors,"** ACM Great Lakes Symposium on VLSI 2014: 249-254, Houston, TX, USA, May 21-23, 2014

Debadatta Mishra, Magda El Zarki, Aiman Erbad, Cheng-Hsing Hsu, Nalini Venkatasubramanian, **"Clouds + Games: A Multifaceted Approach,"** IEEE Internet Computing 18(3): 20-27, May-June 2014

JoAnn Kuchera-Morin, Matthew Wright, Graham Wakefield, Chalres Roberts, Dennis Adderton, Behzad Sajadi, Tobias Hollerer, Aditi Majumder, **"Immersive Full-Surround Multi-User System Design,"** Computers & Graphics 40: 10-21, May 2014

David Eppstein, Michael T. Goodrich, Michael Mitzenmacher, Pawel Pszona, **"Wear Minimization for Cuckoo Hashing: How Not to Throw a Lot of Eggs Into One Basket,"** The Computing Research Repository (CoRR) abs/1404.0286, April 2014

Changmin Lee, Won Woo Ro, Jean-Luc Gaudiot, **"Boosting CUDA Applications with CPU-GPU Hybrid Computing,"** International Journal of Parallel Programming 42(2): 384-404, April 2014

PUBLICATIONS

The following papers were published by CECS affiliates between April 2014 through August 2014 (and unreported papers from previous eNews) - continued from page 9...

Changmin Lee, Won Woo Ro, Jean-Luc Gaudiot, **"Boosting CUDA Applications with CPU-GPU Hybrid Computing,"** International Journal of Parallel Programming 42(2): 384-404, April 2014

Michael T. Goodrich, "Spin-the-Bottle Sort and Annealing Sort**: "Oblivious Sorting via Round-Robin Random Comparisons,"** Algorithmica 68(4): 835-858, April 2014

Mingjing Chen, Alex Orailoglu, **"Examining Timing Path Robustness Under Wide-Bandwidth Power Supply Noise Through Multi-Functional-Cycle Delay Test**," IEEE Transactions on VLSI Systems 22(4): 734-746, April 2014

M. Reza Rahimi, Jian Ren, Chi Harold Liu, Athanasios V. Vasilakos, Nalini Venkatasubramanian, **"Mobile Cloud Computing: A Survey, State of Art and Future Directions,"** Mobile Networks and Appications, MONET 19(2): 133-143, April 2014

Michael T. Goodrich, **"Spin-the-Bottle Sort and Annealing Sort: Oblivious Sorting via Round-Robin Random Comparison,"** Algorithmica 68(4):835-858, April, 2014

Kyoung-Soo We, Chang-Gun Lee, Kyongsu Yi, KIwei-Jay Lin, Yun Sang Lee, **"HRT-PLRU: A New Paging Scheme for Executing Hard Real-Time Programs on NAND Flash Memory,"** IEEE Transactions on Computer (TC)63(4):927-940, April 2014

Michael C. Avery, Nikil Dutt, Jeffrey L. Krichmar**, "Mechanism Underlying the Basal Forebrain Enhancement of Top-Down and Bottom-Up Attention,"** The European Journal of Neuroscience 39(3): 852-865, March, 2014

Hai Jiang, Yi Chen, Zhi Qiao, Kuan-Ching Li, Won Woo Ro, Jean-Luc Gaudiot, "Accelerating MapReduce Framework on Multi-GPU Systems," Cluster Computing 17(2): 293-301, March 2014

Kristofor D. Carlson, Jayram Moorkanikara Nageswaran, Nikil Dutt, Jeffrey L. Krichmar, **"An Efficient Automated parameter Tuning Framework for Spiking Neural Networks,"** Frontiers in Neuroscience, February 4, 2014

Alba de Melo, Jean-Luc Gaudiot, Luiz De Rose, Kunle Olukotun, Albert Y. Zomaya, **"Guest Editorial",** International Journal of Parallel Programming 42(1): 1-3, February 2014

Gülfem Savrun-Yeniceri, Wei Zhang, Huahan Zhang, Eric Seckler, Chen Li, Stefan Brunthaler, Per Larsen, Michael Franz, **"Efficient Hosted Interpreters on the JVM,"** ACM Transactions on Architecture and Code Optimization (TACO)11(1): 9, February, 2014

CECS—*promoting creativity and pursuing discovery!*

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

CECS *Mission Statement:*

To conduct leading-edge interdisciplinary research in embedded systems emphasizing automotive, communications, and medical applications, and to promote technology and knowledge transfer for the benefit of the individual and society.

CECS Research Advisory Board
Dr. Sanjiv Narayan, Vice President & Managing Director, Calypto Design Systems, New Delhi, India

Dr. Dinesh Ramanathan, Executive Vice President, Cypress Semiconductor , San Jose, CA

Dr. Yervant Zorian, Chief Architect, Synopsys Inc., Fremont, CA