Volume 13, Issue 3
Fall '13

CECS eNEWS

Center for Embedded Computer Systems, University of California, Irvine

Highlights

- **NSF Variability-Expeditions Mtg.**
- **ICESS & CIT 2013**
- **Visitor Profile**: Haitham M. DawoodElghannam
- **Student Profile:** Peizhao Ou

Inside this Issue:

NSF Variability/DFG Joint Workshop


The Center of Embedded Computer Systems (CECS) hosted the NSF Variability Expedition Renew & Joint Workshop with DFG SPP 1500 on November 21-23, 2013 at UCI. This joint event was organized by CECS affiliate faculty Nikil Dutt and UCLA graduate researcher Lucas Wanner. The review featured presentations by faculty and students from three University of California campuses (San Diego, Los Angeles and Irvine) as well as the University of Michigan, Stanford University, and the University of Illinois at Urbana Champaign. The event kicked off with opening remarks made by the Director of the NSF Variability Expedition program, UCSD Professor Rajesh Gupta, who welcomed participants and provided a briefing on the progress of the project, to date. Dr. Tanay Karnik from Intel Corporation was invited to give a talk on the "Future of Energy Efficient Computing by Dynamic Variation Tolerant Circuits".

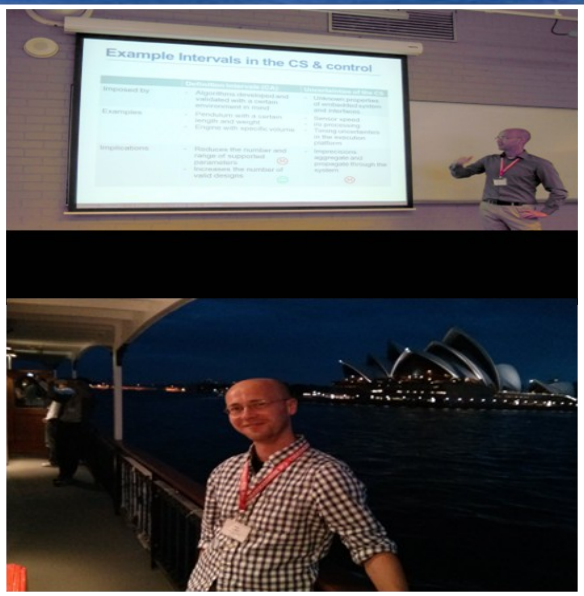
The review was co-located with the German Research Foundation (DFG) Priority Program 1500 Workshop, and attendees included faculty and students from Kaiserslautern University of Technology, Technical University of Munich, Karlsruche Institute of Technology, Friedrich-Alexander University Erlangen-Nurnberg, Technical University of Dortmund, Dresden University of Technology and University of Tübingen. The goal of DFG SPP 1500 is to promote "Design and Architectures of Dependable Embedded Systems – A Grand Challenge in the Nano Age". In addition to presentations related to these topics, there were breakout sessions to focus on potential opportunities for collaboration between German researchers and members of the Variability Expedition program.

For more details about Variability Expedition projects, please visit the Variability website: www.variability.org

CONFERENCES

CECS Down Under! ICESS & CIT 2013

The 10th IEEE International Conference on Embedded Software and Systems (ICESS 2013) and the 13th IEEE International Conference on Computer and Information Technology (CIT 2013) was held in Sydney, Australia, on December 3-5, 2013. CECS Postdoctoral Researcher, Dr. Steffen Peter, in the Cyber Physical System Design Group, presented two NSF-funded research papers entitled "Utilizing Intervals in Component-based Design of Cyber Physical Systems" and "Modeling and Mitigation of Faults in Cyber-Physical Systems with Binary Sensors". The presentation slides can be found at the Cyber Physical Systems Design Group website at: www.cps.ics.uci.edu/icess2013-and-cit2013/



Conference & Workshop Presentation Highlights

Two research papers were accepted and presented by CECS graduate students at the Asilomar Conference on Signals, Systems, and Computers, held in Pacific Grove, CA, on December 12, 2013. Muhammad Abdelghaffar presented his paper titled **"Efficient Error-Aware Power Management for Memory Dominated OFDM Systems",** at the Technical Program Session for *Communication System Design*. Muhammad received his Ph.D. in September 2013, and was co-advised by Professors Fadi Kurdahi and Ahmed Eltawil. He is now working at Qualcomm in San Diego.

At the Technical Program Session for *Communication Systems II*, the paper titled **"Resource Allocation for Mobile Video Conferencing"** was presented by Chao Yang, a 4th year Ph.D. student in the Networked Systems Program. His advisor is Prof. Scott Jordan.

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Presentation Highlights (continued from page 2)...

Amr M.A. Hussien attended the 1st IEEE Global Conference on Signal and Information Processing (GlobalSIP 2013) held on December 3-5, 2013 in Austin, TX. Amr presented his paper titled **"Low Overhead Correction Scheme for Unreliable LDPC Buffering"**, at the Technical Program Symposium on *Low-Power Systems and Signal Processing.* Amr Hussein received his PhD in September 2013, and was co-advised by Professors Fadi Kurdahi and Ahmed Eltawil. He is currently working at Newport Media in Lake Forest, CA.

Wael Elsharkasy traveled to San Jose on November 21, 2013, to present his poster titled, **"High Sigma Variability Modeling of TG Latches**", in the IEEE/ACM Workshop on Variability Modeling and Characterization (VMC) at the 2013 International Conference on Computer-Aided Design (ICCAD 2013). Wael Elsharkasy is a 3rd year Ph.D. student working with Professors Kurdahi and Eltawil. His research interests are in the area of digital VLSI design, variability in memory elements and design of resilient circuits.

Ye Zhao, a PhD candidate in the Network Systems Program attended the ACM/IFIP/USENIX International Middleware Conference (MIDDLEWARE'13) in Beijing, China, on December 9-13, 2013 to present his paper **"O2SM: Enabling Efficient Offline Access to Online Social Media and Social Networks".** He also participated in DEBS 2013: The 7th ACM International Conference on Distributed Event-Based Systems, June 29 – July 3, 2013, held at Arlington, Texas, and presented two papers, **"DYNATOPS: A Dynamic Topic-based Publish/Subscribe Architecture,"** and **"Towards Efficient GeoSocial Content Dissemination".** Ye Zhao is working with Professor Nalini Venkatasubramanian in the Distributed System Middleware (DSM) group. His research interests include overlay networks, disruptive tolerant networks, and ubiquitous computing.

VISITOR PROFILE

Visitor: Haitham M. DawoodElghannam

Staff

Associate lecturer and researcher Haitham M. DawoodElghannam is a visiting scholar at the Center for Embedded Computer Systems (CECS), hosted by Professor Ahmed Eltawil, from August 2013 through November 2013.

Haitham is a second year Ph.D. student in M.T.C, Cairo, Egypt. He obtained his master's degree in communication engineering from AAST Cairo in 2011. His previous research was mainly focused on Network Security, designing Encryption Algorithms using FPGA, and testing the performance of these algorithms.

In 2011, he joined the communication department at M.T.C. Cairo, as a Ph.D. Student.

His current research interests are in wireless communication networks, including:

- Analysis and Assessment of IEEE 802.16 WiMAX Network Protocols.
- Survey of security related issues applicable in WIMAX network.
- Analytical studies for different encryption algorithms used in WIMAX network.
- Design optimized encryption algorithm based on latest security systems.
- Simulation, Testing, and Evaluation of proposed encryption algorithm.

Haitham says he is very excited to have the opportunity to visit UCI, and wishes to contribute to CECS research and to create a cooperative working environment that will provide the opportunity for research collaboration between UCI and M.T.C. Cairo in the future.

STUDENT PROFILE & JOINT MTG.

Student: Peizhao Ou

-Staff

Peizhao Ou is a second-year MS/PhD Student in computer engineering in the department of Electrical Engineering and Computer Science at UC Irvine. He received his Bachelor's degree in Software Engineering from Shanghai Jiao Tong University, China in 2012.

When he was an undergraduate student in Jiao Tong University in 2011, he worked on a project on Automatic API Parameter Recommendation for Java, which took advantage of data-mining techniques to decrease the difficulties for programmers to use complex API. That was his first time working as a junior researcher in the area of software engineering and programming languages.

In fall 2012, he joined Prof. Brian Demsky's research group at UC Irvine. His research interest is mainly in static and dynamic program analysis, and software system verification and compilation. From fall 2012 to summer 2013, Peizhao worked on the Crowd Safe project, an ongoing project which focuses on using dynamic program analysis and crowd-sourcing techniques to make computer systems more secure on the OS level. In summer 2013, he started to work on another project which checks the correctness of concurrent data structure on a C11 memory model, where his main contribution will be designing a useful and easy-to-use specification language for library programmers to check their concurrent data structures written in C11. Hopefully, this will help find hidden bugs in concurrent data structures.

DRG & CARL Joint Lunch Meeting

The Dutt Research Group (DRG) is currently working on the SyNAPSE (Systems of Neuromorphic Adaptive Plastic Scalable Electronics) project in collaboration with the Cognitive Anteater Robotics Laboratory (CARL), led by Prof. Jeff Krichmar, in the School of Social Science. On October 31, 2013, Professor Dutt hosted a joint luncheon at Chakra restaurant to bring two groups together to formally introduce the members. It provided a great opportunity for everyone to meet, exchange ideas and share information.

PUBLICATIONS

Publications

The following papers were published by CECS affiliates between July 2013 to December 2013 (and unreported papers from previous eNews).

Author, Title, Publication **Conference Proceedings**

M.A. Al Faruque, **"EDA for Cyber-Physical Energy Systems Design,"** NSF 2013 National Workshop on Energy CPS, Washington DC, USA, December 16-17, 2013

Ye Zhao, Ngoc Do, Shu-Ting Wang, Cheng-Hsin Hsu, Nalini Venkatasubramanian, **"O2SM: Enabling Efficient Offline Access to Online Social Media and Social Networks,"** ACM/IFIP/USENIX International Middleware Conference (MIDDLEWARE'13), Beijing, China, December 9-13, 2013

Ayhan Demiriz, Nader Bagherzadeh, **"On Heterogeneous Network-on-chip Design Based on Constraint Programming,"** International Symposium on Microarchitecture (MICRO'13), Davis, CA, USA, December 7-11, 2013

Amr Hussien, Wael Elsharkasy, Ahmed Eltawil, Fadi Kurdahi, Amin Khajeh. **"Low Overhead Correction Scheme for Unreliable LDPC Buffering."** The 2013 IEEE GlobalSIP Symposium on Low-Power Systems and Signal Processing (GlobalSIP'13), December 3-5, 2013, Austin, TX, USA

Steffen Peter, Tony Givargis, **"Utilizing Intervals in Component-based Design of Cyber Physical Systems,"** 10th IEEE International Conference on Embedded Software and Systems (ICESS), Sydney, Australia, December 3-5, 2013

Volkan Gunes, Steffen Peter, Tony Givargis, **"Modeling and Mitigation of Faults in Cyber-Physical Systems with Binary Sensors,"** IEEE 13th International Conference on Computer and Information Technology (CIT), Sydney, Australia, December 3-5, 2013

Ch. Kerschbaumer, E. Henningan, S. Brunthaler, P. Larsen, and M. Franz, **"CrowdFlow: Efficient Information Flow Security,"** the 16th Information Security Conference (ISC 2013), Dallas Texas, November 13-15. 2013

Bharathan Balaji, Jian Xu, Anthony Nwokafor, Rajesh Gupta, Yuvraj Agarwal, **"Sentinel: Occupancy based HVAC Actuation Using Existing WiFi Infrastructure within Commercial Buildings,"** the 11th ACM Conference on Embedded Network Sensor Systems (Sensys'13), Roma, Italy, November 11-15, 2013

Michael Methfessel, Stefan Lange, Rolf Kraemer, Mario Zessack, Steffen Peter, **"Self-Organized Bluetooth Scatternets for Wireless Sensor Networks,"** The 11th ACM Conference on Embedded Entworked Sensor Systems (SenSys'13), Rome, Italy, November 11-14, 2013

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PUBLICATIONS

The following papers were published by CECS affiliates between July 2013 to December 2013 (and unreported papers from previous eNews) - continued from page 6...

A. Homescu, S. Brunthaler, P. Larsen, Michael Franz, "**librando: Transparent Code Randomization for Just-in-Time Compilers,"** the 20th ACM Conference on Computer and Communications Security (CCS), Berlin, Germany, November 4-8, 2013

Emiliano De Cristofaro, Sky Faber, Gene Tsudi, "**Secure Genomic Testing with Size-and Position-hiding Private Substring Matching,"** The 12th ACM Workshop on Privacy in the Electronic Society (WPES'13), Berlin, Germany, November 4, 2013

Bojan Milosevic, Jinseok Yang, Nakul Verma, Sameer S. Tilak, Piero Zappi, Elsabetta Farella, Luca Benini, Tajana Simunic Rosing, **"Efficient Energy Management and Data Recovery in Sensor Networks using Latent Variables Based Tensor Factorization,"** the 16th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM'13): 247-254, Barcelona, Spain, November 3-8, 2013

G. Savrun-Yeniceri, W. Zhang, H. Zhang, E. Seckler, C.Li, S. Brunthaler, P. Larsen , and M. Franz, "**Efficient Interpreter Optimizations for the JVM,"** the 10th International Conference on Principles and Practice of Programming in Java (PPPJ'13):113-123, Stuttgart, Germany, September 11-13, 2013

Michael Methfessel, Stefan Lange, Rolf Kraemer, Mario Zessack, Peter Kollermann, Steffen Peter, **"Real-Life Deployment of Bluetooth Scatternets for Wireless Sensor Networks,"** the 5th Workshop on Real-World Wireless Sensor Networks (RealWSN'13), Como Lake, Italy
September 19-20, 2013

Mishari Al Mishari, Paolo Gasti, Gene Tsudik, Ekin Oguz, "**Privacy-Preserving Matching of Communicty-Contributed Content,"** the 18th European Symposium on Research in Computer Security (ESORICS'13), Egham, UK, September 9-13, 2013

S. Crane, P. Larsen, S. Brunthaler, Michael Franz, "**Booby Trapping Software,"** New Security Paradigms Workshop (NSPW'13), Baniff, Canada, September 2013

Il-Seok Oh, Jin-Seon Lee, Aditi Majumder, **"Multi-scale Image Segmentation Using MSER,"** The 15th International Conference on Computer Analysis of Images and Patterns (CAIP'13), York, UK, August, 27-29, 2013

Rosario Cammarota, Laleh Aghababaie Beni, Alexandru Nicolau, Alexander V. Veidenbaum, **"Optimizing Program Performance via Similarity, Using a Feature-Agnostic Approach,"** The 10th International Conference on Advanced Parallel Processing Technology (APPT'13), Stockholm, Sweden, August 27-28, 2013

George Porter, Richard D. Strong, Nathan Farrington, Alex Forencich, Pang-Chen Sun, Tajana Rosing, Yeshaiahu Fainman, George Papen, Amin Vahdat, **"Integrating Microsecond Circuit Switching into the Date Center,"** ACM SIGCOMM 2013 Conference (SIGCOMM'13): 447-458, Hong Kong, China, August 12-16, 2013

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The following papers were published by CECS affiliates between July 2013 to December 2013 (and unreported papers from previous eNews) - continued from page 7...

Paolo Gasti, Gene Tsudik, Ersin Uzun, Lixia Zhang, **"DoS and DDoS in Named Data Networking,"** the 22nd International Conference on Computer Communication and Network (ICCCN'13), Nassau, Bahamas, July 30-August 2, 2013

Daniel Gajski, Quoc-Viet Dang, WenLiang He, **"An Online Methodology for Individualized Education,"** International Conference on e-Learning, e-Business, EIS, and e-Government, Las Vegas, NV, USA, July 22-25, 2013

Gergely Acs, Mauro Conti, Paolo Gasti, Cesar Ghali, Gene Tsudik, **"Cache Privacy in Named-Data Networking,"** International Conference on Distributed Computing Systems (ICDCS'13), Philadelphia, PA, USA, July 8-11, 2013

Kiyoshi Nakayama, Kyle E. Benson, Vahe Avagyan, Michael B. Dillencourt, Lubomir F. Bic, Nalini Venkatasubramanian, **"Tie-set Based Fault Tolerance for Autonomous Recovery of Double-Link Failures,"** IEEE Symposium on Computers and Communications (ISCC'13), Split, Croatia, July 7-10, 2013

Matthew Badin, Paolo D'Alberto, Lubomir Bic, Michael Dillencourt, Alexandru Nicolau, **"Improving Numerical Accuracy for Non-Negative matrix Multiplication on GPUs using Recursive Algorithms,"** International Conference on Supercomputing (ICS'13), Eugene, OR, USA, June 10-13, 2013

S. Crane, P. Larsen, S. Brunthaler, and M. Franz; **"Booby Trapping Software;"** accepted for publication in 2013 New Security Paradigms Workshop (NSPW 2013), Banff, Canada; September 2013.

Takuya Azumi, Yasaman Samei Syahkal, Yuko Hara-Azumi, Hiroshi Oyama, Rainer Dömer, , **"TECSCE: HW/SW Codesign Framework for Data Parallelism Based on Software Component,"** International Embedded Systems Symposium (IESS), Paderborn, Germany, June 17-19, 2013: 1-13

Che-Wei Chang, Rainer Dömer, **"Formal Deadlock Analysis of SpecC Models Using Satifiability Modulo Theories,"** International Embedded Systems Symposium (IESS), Paderborn, Germany, June 17-19, 2013: 116-127

Matthew Badin, Paolo D'Alberto, Lubomir Bic, Michael B. Dillencourt, Alexandru Nicolau, **"Improving Num Accuracy for non-negative Matrix Multiplication on GPUs Using Recursive Algorthms,"** International Conference on Supercomputing (ICS), Eugene, OR, USA, June 10-14, 2013

Nikil Dutt, **"Outlook for Many-Core Systems: Cloudy with a Chance of Virtualization,"** the 18th IEEE European Test Symposium, Avignon, France, May 27-31, 2013

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Michael Beyeler, Nikil D. Dutt, Jeffrey L. Krichmar, "**Categorization and Decision-making in a Neurobiologically Plausible Spiking Network Using a STDP-like Learning Rule,"** Neural networks 48: 109-124, December 2013

Ch. Kerschbaumer, E. Hennigan, P. Larsen, S. Brunthaler, Michael Franz, **"Information Flow Tracking meets Just-In-Time Compilation,"** ACM Transactions on Architecture and Code Optimization 10(4): 38, December 2013

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Jie Tang, Chen Liu, Shaoshan Liu, Jean-Luc Gaudiot, "**Practical Models for Energy-efficient Prefetching in Mobile Embedded Systems,"** Microprocessors and Microsystems: Embedded Hardware Design (MICPRO) 37 (8-D): 1173-1182, November, 2013

M.S. Khairy, A. Khajeh, A.M. Eltawil, F.J. Kurdahi, **"Equi-Noise: A Statistical Model that Combines Embedded Memory Failures and Channel Noise."** IEEE Transactions on Circuits and Systems I, 2013

Ahmed M. Eltawil, Michael Engel, Bibiche M. Geuskens, Amin Khajeh Djahromi, Fadi J. Kurdahi, Peter Marwedel, Smail Niar, Mazen A. R. Saghir, **"A Survey of Cross-layer Power-reliability Tradeoffs in Multi and Many Core Systems-on-chip,"** Microprocessors and Microsystems: Embedded Hardware Design (MICPRO) 37(8-A): 760-771, November 2013

T. Jackson, A. Homescu, S. Crane, P. Larsen, S. Brunthaler, Michael Franz, **"Diversifying the Software Stack Using Randomized NOP Insertion,"** Moving Target Defense, Advances in Information Security (100): 151-173 (2013)

Alexis B. Craig, Derrik E. Asher, Nicolas Oros, Alyssa A. Brewer, Jeffrey L. Krichmar, "**Social Contracts and Human-computer Interaction with Simulated Adapting Agents,"** Adaptive Behaviour 21(5): 371-387, October 2013

Pei-Yuan Chiang, Omeed Momeni, Payam Heydari, "**A 200 GHz Inductively Tuned VCO with -7dBm Output Power in 130nm SiGe BiCMOS"** IEEE Transactions on Microwave Theory and Techniques 61(10): 3666-3673, October 2013

Alex D. Edgcomb, Frank Vahid, "**Accurate and Efficient Algorithms that Adapt to Privacy-Enhanced Video for Improved Assistive Monitoring,"** ACM Transactions on Management Information Systems 4 (3):14, October, 2013

Maryam Mehri Dehnavi, David M. Fernanadez, Jean-Luc Gaudiot, Dennis D. Giannacopoulos, **"Parallel Sparse Approximate Inverse Preconditioning on Graphic Processing Units,"** IEEE Transactions on Parallel and Distributed Systems 24(9): 1852-1862, September 2013

Robert Di Pietro, Gabriele Oligeri, Claudio Soreinte, Gene Tsudik, **"United We Stand: Intrusion Resilience in Mobile Unattended WSNs,"** IEEE Transactions on Mobile Computing 12(7): 1456-1468(2013)

Jie Tang, Shaoshan Liu, Chen liu, Zhimin Gu, Jean-Luc Gaudiot, **"Acceleration of XML Parsing through Prefetching,"** IEEE Transactions on Computers 62(8): 1616-1628, August , 2013

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Chen Huang, Frank Vahid, Tony Givargis, "**Automatic Synthesis of Physical System Differential Equation Models to a Custom Network of General Processing Elements on FPGAs,"** ACM Transactions on Embedded Computer System (TECS)13(2): 23, August, 2013

Elsayed Ahmed, Ahmed M. Eltawil, Ashutosh Sabharwal, **"Self-Interference Cancellation with Nonlinear Distortion with Phase Noise Induced ICI Supression for Full-Duplex Systems,"** The Computer Research Repository (CoRR) abs/1307.4149, July 2013

Elsayed Ahmed, Ahmed M. Eltawil, Ashutosh Sabharwal, **"Self-Interference Cancellation with Nonlinear Distortion Supression for Full-Duplex Systems,"** The Computer Research Repository (CoRR) abs/1307.3796, July 2013

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Nam Duong, Alexander V. Veidenbaum, **"Compiler-Assisted, Selective Out-of-Order Commit,"** IEEE Coomputer Architecture Letters(12): 21-24(2013)

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Jie Tang, Shaoshan Liu, Chen Liu, Zhimin Gu, Jean-Luc Gaudiot, "**Acceleration of XML Parsing through Prefetching,"** IEEE Transactions on Computers 62(8): 1616-1628(2013)

A.A. Eltawil, M. Engel, B. Geuskens, A.K. Djahromi, F.J. Kurdahi, P. Marwedel, S. Niar, M. Saghir, "**A Survey of Cross-layer Power-Reliability Tradeoffs in Multi and Many Core Systems-on-chip"** Microprocessors and Microsystems: Embedded Hardware Design (MICPRO), December, 2013

Andrew B. Kahng, Seokhyeong Kang, Tajana Simunic Rosing, Richard D. Strong, **"Many-core Token-based Adaptive Power Gating,"** IEEE Transactions on CAD of Integrated Circuits and Systems 21(8): 1288-1292 (2013)

Sehwan Kim, Pai H. Chou, **"Analysis and Minimization of Power-Transmission Loss in Locally Daisy-chained Systems by local Energy Buffering,"** ACM Transactions on Design Automation of Electronic Systems 18(3): 37, July 2013

Shervin Sharifi, Dilip Krishnaswamy, Tajana Simunic Rosing, **"PROMETHEUS: A Proactive Method for Thermal Management of Heterogeneous MPSoCs,"** IEEE Transactions on CAD of Integrated Circuits and Systems 32(7): 1110-1123(2013)

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Muhammad Abdullah Adnan, Rajesh Gupta, **"Path Consolidation for Dynamic Right-sizing of Data Center Networks,"** IEEE 6th International Conference on Cloud Computing, Santa Clara, CA, USA, June 28 – July 3, 2013

Hamid Sarbazi-Azad, Naderzadeh, "**Multicore Computing Systems: Architecture, Programming Tools, and Applications,"** Journal of Computer and System Sciences, 79(4): 403-405, June 2013

Chifeng Wang, Wen-Hsing Hu, Nader Bagherzadeh, **"Scalable Load Balancing Congestion-aware network -on-Chip Router Architecture,"** Journal of Computer and System Sciences 79(4): 406-420, June 2013

Alfred Kobsa, Rishab Nithyanand, Gene Tsudik, **"Can Jannie Verify" Usability of Display-equipeed RFID Tags for Security Purposes,"** Journal of Computer Security 21(3): 347-370 (2013)

Rahul Amin, Jim Martin, Juan D. Deaton, Luiz A. DaSilva, Amr M.A. Hussien, Ahmed M. Eltawil, **"Balancing Spectral Efficiency, Energy Consumption, and Fairness in Future Heterogeneous Wireless Systems with Reconfigurable Devices,"** IEEE Jouranl on Selected Areas in Communications 31(5): 969-980, May 2013

Sanaz Azampanah, Ahmad Khademzadeh, Nader Bagherzadeh, Majid Janidarmian, Reza Shojaee, **"Contention-aware Selection Strategy for Application-specific Network-on-chip,"** IET Computers & Digital Techniques 7(3), May 2013

Technical Reports

Nicolas Oros, Jeffrey L. Krichmar, **"Smartphone Based Robotics: Powerful, Flexible and Inexpensive Robots for Hobbyists,"** Educators, Students and Researchers," TR 13-16. Posted December 3, 2013

Il-Joon Kim, Amin Khajeh, Fadi J. Kurdahi and Ahmed M. Eltawil, **"Variability-Aware Modling of Pulse Latches,"** TR 13-15. Posted October 31, 2013

Il-Joon Kim, Amin Khajeh, Fadi J. Kurdahi and Ahmed M. Eltawil, **"Variability-Aware Static Latch Modeling,"** TR 13-14. Posted on October 31, 2013

Patricia S. Lee and Ian G. Harris, **"Message Sequence Charts for Assertion-based Verification,"** TR 13-13. Posted October 31, 2013

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***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.

The following papers were published by CECS affiliates between July 2013 to December 2013 (and unreported papers from previous eNews) - continued from page 11...

Patricia Lee Shireesh Verma and Ian G. Harris, **"A Comparison of Error Detection Between Simulation-based Validation and Model Checking,"** TR 13-12. Posted on October 8, 2013

Fereidoun Ahourai, Mohammad Abdullah Al Faruque, **"Grid Impact Analysis of a Residential Microgrid under Various EV Penetration Rates in GridLab-D,"** TR 13-08. Posted on July 31, 2013

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