IEEE REAL-TIME SYSTEMS SYMPOSIUM

RTSS 2013 DECEMBER 3-6, VANCOUVER, CANADA

Day 1: Wednesday, December 4, 2013

Sessions: Salon A	**Lunch: Tuscany Room**
8:25 – 9:00 Welcome and Award Speech	**Welcome** *Chenyang Lu (Washington University in St. Louis) and Michael González Harbour (Universidad de Cantabria)* **Award Speech: Cyber-physical Systems in Social Spaces: A Data Reliability Perspective** *Tarek Abdelzaher (University of Illinois at Urbana Champaign)*
9:00 – 10:00 Session 1: Multicore Platforms Chair: Karl-Erik Årzén	**Cache-Aware Compositional Analysis of Real-Time Multicore Virtualization Platforms** *Meng Xu, Linh Thi Xuan Phan, Insup Lee, Oleg Sokolsky, Sisu Xi, Chenyang Lu and Chris Gill* **Schedulability Analysis for a Mode Transition in Real-Time Multi-Core Systems** *Jinkyu Lee and Kang G. Shin*
10:00 – 10:30	**Break**
10:30 – 12:30 Session 2: Systems Chair: Aniruddha Gokhale	**Predictable, Efficient System-Level Fault Tolerance in C^3** *Jiguo Song, John Wittrock and Gabriel Parmer* **GPUSync: A Framework for Real-Time GPU Management** *Glenn Elliott, Bryan Ward and James Anderson* **On Spin Locks in AUTOSAR: Blocking Analysis of FIFO, Unordered, and Priority-Ordered Spin Locks** *Alexander Wieder and Björn Brandenburg* **GreenBag: Energy-efficient Bandwidth Aggregation for Real-time Streaming in Heterogeneous Mobile Wireless Networks** *Duc Bui, Kilho Lee, Sangeun Oh, Insik Shin, Hyojeong Shin, Honguk Woo and Daehyun Ban*
12:30 – 14:00	**Lunch**
14:00 – 15:30 Session 3: Mixed Criticality Systems Chair: Linh Thi Xuan Phan	**Mixed-criticality scheduling upon varying-speed processors** *Sanjoy Baruah and Zhishan Guo* **Demand-based Scheduling of Mixed-Criticality Sporadic Tasks on One Processor** *Arvind Easwaran* **Monitoring of Workload Arrival Functions for Mixed-Criticality Systems** *Moritz Neukirchner, Philip Axer, Tobias Michaels and Rolf Ernst*
15:30 – 16:00	**Break**
16:00 – 17:00 Session 4: Cyber-Physical Systems, Applications Chair: Alfons Crespo	**Design and Management of Satellite Power Systems** *Jinkyu Lee, Eugene Kim and Kang G. Shin* **Minimizing Building Electricity Costs in a Dynamic Power Market: Algorithms and Impact on Energy Conservation** *Dawei Pan, Dan Wang, Jiannong Cao, Yu Peng and Xiyuan Peng*
17:00 – 18:00	**Work-in-Progress Session** Chair: Rodolfo Pellizzoni
18:00 – 20:00 **Grand Foyer (Level A)**	**Work-in-Progress Posters and Welcome Reception**

Day 2: Thursday, December 5, 2013

Sessions: Salon A	Lunch: Tuscany Room
8:30 – 10:00 Keynote address Chair: Chenyang Lu	**Taming the Energy Hog in Cloud Infrastructure** *Jie Liu (Microsoft Research)*
10:00 – 10:30	**Break**
10:30 – 12:30 Session 5: Cyber-Physical Systems, Technology Chair: Luigi Palopoli	**Exploring Adaptive Reconfiguration to Optimize Energy Efficiency in Large Battery Systems** *Liang He, Lipeng Gu, Linghe Kong, Yu Gu, Cong Liu and Tian He* **Integrated Timing Analysis of Application and Operating Systems Code** *Lee Kee Chong, Clement Ballabriga, Van-Thuan Pham, Sudipta Chattopadhyay and Abhik Roychoudhury* **RT-WiFi: Real-Time High-Speed Communication Protocol for Wireless Cyber-Physical Control Applications** *Yi-Hung Wei, Quan Leng, Song Han, Aloysius K. Mok, Wenlong Zhang and Masayoshi Tomizuka* **The Continuous Stream Model of Computation for Real–Time Control** *Daniele Fontanelli, Luca Abeni and Luigi Palopoli*
12:30 – 14:00	**Lunch**
14:00 – 15:30 Session 6: Multiprocessor Scheduling Chair: Kunal Agrawal	**Multiprocessor feasibility analysis of recurrent task systems with specified processor affinities** *Sanjoy Baruah and Björn Brandenburg* **Multiprocessor Real-Time Scheduling with a Few Migrating Tasks** *J. Augusto Santos-Jr., George Lima, Konstantinos Bletsas and Shinpei Kato* **Limited Pre-emptive Global Fixed Task Priority** *José Marinho, Vincent Nélis, Stefan M. Petters, Marko Bertogna and Robert Davis*
15:30 – 16:00	**Break**
16:00 – 17:30 Session 7: Wireless Sensor Networks I Chair: Raj Rajkumar	**Self-Adapting MAC Layer for Wireless Sensor Networks** *Mo Sha, Rahav Dor, Gregory Hackmann, Chenyang Lu, Tae-Suk Kim and Taerim Park* **D2: Detecting and Diagnosing Sensor Network Failures by Program Profiling and Symptom Mining** *Wei Dong, Chun Chen, Jiajun Bu, Xue Liu and Yunhao Liu* **Exploitation of Physical Constraints for Reliable Social Sensing** *Dong Wang, Tarek Abdelzaher, Lance Kaplan, Raghu Ganti, Shaohan Hu and Hengchang Liu*
17:30 – 18:00	**TC Meeting**
20:00 – 22:00	**Banquet at *Vancouver Aquarium*** *(Buses will leave the hotel between 18:40 and 18:45 hrs.)*

Day 3: Friday, December 6, 2013

Sessions: Salon A	Lunch: Tuscany Room
8:30 – 10:00 Session 8: Real-Time Scheduling Chair: George Lima	**Multi-Level Unified Caches for Probabilistically Time Analysable Real-Time Systems** *Leonidas Kosmidis, Jaume Abella, Eduardo Quiñones and Francisco Cazorla* **Polynomial-Time Exact Schedulability Tests for Harmonic Real-Time Tasks** *Vincenzo Bonifaci, Alberto Marchetti-Spaccamela, Nicole Megow and Andreas Wiese* **Segment-Fixed Priority Scheduling for Self-Suspending Real-Time Tasks** *Junsung Kim, Bjorn Andersson, Dionisio de Niz and Raj Rajkumar*
10:00 – 10:30	**Break**
10:30 – 12:30 Session 9: Wireless Sensor Networks II Chair: Tarek Abdelzaher	**System Support for Micro-Harvester powered Mobile Sensing** *Alexander Nelson, Jackson Schmandt, William Wilkins, James Parkerson and Nilanjan Banerjee* **Hardware Assisted Clock Synchronization for Real-Time Sensor Networks** *Maxim Buevich, Niranjini Rajagopal and Anthony Rowe* **Enabling Fast and Reliable Network-wide Event-triggered Wakeup in WSNs** *Xuefeng Liu, Jiannong Cao and Shaojie Tang* **Respawn: A Distributed Multi-resolution Time-series Datastore** *Maxim Buevich, Anne Wright, Randy Sargent, and Anthony Rowe*
12:30 – 13:30	**Lunch**
13:30 – 15:30 Session 10: Design and Verification Chair: Dionisio de Niz	**Designing Bandwidth-Efficient Stabilizing Control Servers** *Amir Aminifar, Enrico Bini, Petru Eles and Zebo Peng* **Energy Efficient Task Partitioning based on the Single Frequency Approximation Scheme** *Santiago Pagani and Jian-Jia Chen* **Static Analysis Driven Cache Performance Testing** *Abhijeet Banerjee, Sudipta Chattopadhyay and Abhik Roychoudhury* **Finitary Real-Time Calculus: Efficient Performance Analysis of Distributed Embedded Systems** *Nan Guan and Wang Yi*
15:30 – 16:00	**Break**
16:00 – 18:00 Session 11: Scheduling and Timing Analysis Chair: Bjorn Andersson	**Combinatorial Abstraction Refinement for Feasibility Analysis** *Martin Stigge and Wang Yi* **Task Set Synthesis with Cost Minimization for Sporadic Real-Time Tasks** *Jian-Jia Chen* **Response Time Analysis for Fixed-Priority Tasks with Multiple Probabilistic Parameters** *Dorin Maxim and Liliana Cucu-Grosjean* **Worst Case Analysis of DRAM Latency in Multi-Requestor Systems** *Zheng Pei Wu, Yogen Krish and Rodolfo Pellizzoni*
18:00 – 18:10	**Closing Remarks**