Tuesday, April 16, 2019

08:00-09:00 Registration
09:00-10:00 Keynote
  • Victor Bahl (Microsoft)
10:00-10:30 Coffee Break
10:30-12:30 Session 1: Multicore and GPUs
  • 2018 TCRTS Outstanding Technical Achievement and Leadership Award Acceptance Speech
    James H. Anderson (University of North Carolina at Chapel Hill)
  • Deterministic Memory Hierarchy and Virtualization for Modern Multi-Core Embedded Systems
    Tomasz Kloda and Marco Solieri (Università di Modena e Reggio Emilia); Renato Mancuso (Boston University);
    Nicola Capodieci, Paolo Valente, and Marko Bertogna (Università di Modena e Reggio Emilia)
  • Accurate ILP-based contention modeling on statically scheduled multicore systems
    Xavier Palomo, Enrico Mezzetti, and Jaume Abella (Barcelona Supercomputing Center); Reinder J. Bril
    (Technische Universiteit Eindhoven); Francisco J. Cazorla (Barcelona Supercomputing Center)
  • Fractional GPUs: Software-based Compute and Memory Bandwidth Reservation for GPUs
    Saksham Jain and Iljoo Baek (Carnegie Mellon University); Shige Wang (GM Motors R&D); Rajunathan (Raj)
    Rajkumar (Carnegie Mellon University)
12:30-14:00 Lunch
14:00-15:30 Session 2: Systems and Applications I
  • Doorplor: A Radar-based System for Low Power, Real-time Zone Occupancy Sensing
    Avinash Kalyanaraman, Elahe Soltanaghaei, and Kamin Whitehouse (University of Virginia)
  • PIFA: An Intelligent Phase Identification and Frequency Adjustment Framework for Time-Sensitive Mobile
    Computing
    Xia Zhang (University of Texas at Dallas); Xusheng Xiao (Case Western Reserve University); Liang He (University
    of Colorado at Denver); Yun Ma, Yangyang Huang, and Xuanzhe Liu (Peking University); Wenyao Xu (University
    at Buffalo); Cong Liu (University of Texas at Dallas)
  • Deterministic Futexes: Addressing WCET and Bounded Interference Concerns
    Alexander Zuepke and Robert Kaiser (RheinMain University of Applied Sciences)
  • Chaos: a System for Criticality-Aware, Multi-core Coordination
    Phani Kishore Gadepalli, Gregor Peach, Gabriel Parmer, Joseph Espy, and Zach Day (The George Washington
    University)
15:30-16:00 Coffee Break
16:00-17:30 Session 3: Brief Presentations
  • Work-in-progress and demo presentations (TBD)
17:30-20:00 Demo and Poster Session (with Cocktail Reception)
Wednesday, April 17, 2019

08:00–09:00 Registration
09:00–10:00 Keynote
  • Moshe Vardi (Rice University)
10:00–10:30 Coffee Break
10:30–11:40 Session 4: Security and Differential Timing Analysis
  • A Novel Side-Channel in Real-Time Schedulers
    Chien-Ying Chen and Sibin Mohan (University of Illinois at Urbana-Champaign); Rodolfo Pellizzoni (University of Waterloo); Rakesh B. Bobba (Oregon State University); Negar Kiyavash (University of Illinois at Urbana-Champaign)
  • On the Limitations and Vulnerabilities of Schedule Randomization against Schedule-Based Attacks
    Mitra Nasri (Delft University of Technology); Thidapat (Tam) Chanth (Virginia Tech); Gedare Bloom (Howard University); Ryan M. Gerdes (Virginia Tech)
  • Characterizing Dominant Program Behavior Using the Execution-Time Variance of the Call Structure
    Tushar Kumar (Google, Inc.); Kanggi Ni and Santosh Pande (Georgia Tech)
11:40–12:30 Breakout Session / Collaboration Time
  • Time to make progress with your collaborators on next year’s RTAS submission.
12:30–14:00 Lunch
14:00–15:30 Session 5: Parallel Tasks
  • Bundled Scheduling of Parallel Real-time Tasks
    Waqar Ali and Heechul Yun (The University of Kansas)
  • Energy-Efficient Real-Time Scheduling of DAGs on Clustered Multi-Core Platforms
    Zhishan Guo and Ashik Ahmed Bhiyan (University of Central Florida); Di Liu (Yunnan University); Aamir Khan (BrainCo); Abusayeed Saifullah (Wayne State University); Nan Guan (Hong Kong Polytechnic University)
  • Calculating Response Time Bounds for OpenMP Task Systems with Conditional Branches
    Jinghao Sun (Northeastern University); Nan Guan (The Hong Kong Polytechnic University); Jingchang Sun (Tsinghua University); Yaoyao Chi (Northeastern University)
15:30–16:00 Coffee Break
16:00–17:30 Session 6: Networks
  • CertiCAN: A Tool for the Coq Certification of CAN Analysis Results
    Pascal Fradet (Inria Grenoble); Xiaojie Guo (Univ. Grenoble Alpes, Inria); Jean-François Monin (Univ. Grenoble Alpes); Sophie Quinton (Inria Grenoble)
  • Optimal Priority Assignment for Scheduling Mixed CAN and CAN-FD Frames
    Taeju Park and Kang G. Shin (University of Michigan, Ann Arbor)
  • Fault-Resilient Real-Time Communication Using Software-Defined Networking
    Kilho Lee, Minsu Kim, and Hanyeon Kim (School of Computing, KAIST, Republic of Korea); Jinkyu Lee (Dept. of Computer Science and Engineering, Sungkyunkwan University (SKKU), Republic of Korea); Hoon Sung Chwa (Dept. of Information and Communication Engineering, DGIST, Republic of Korea); Insik Shin (School of Computing, KAIST, Republic of Korea)
  • DistributedHART: A Distributed Real Time Scheduling System for WirelessHART Networks
    Venkata Prashant Modekurthy and Abusayeed Saifullah (Wayne State University); Sanjay Madria (Missouri University of Science and Technology)
17:30–18:00 CPS-IoT Week Business Meeting
19:30–22:30 Banquet
Thursday, April 18, 2019

08:00–09:00 Registration

09:00–10:00 Keynote
- Tulika Mitra (National University of Singapore)

10:00–10:30 Coffee Break

10:30–12:30 Session 7: Scheduling and Synchronization
  Leonie Köhler and Rolf Ernst (TU Braunschweig)
- Job-Class-Level Fixed Priority Scheduling of Weakly-Hard Real-Time Systems
  Hyunjong Choi and Hyoseung Kim (University of California, Riverside); Qi Zhu (Northwestern University)
- Thermal-Aware Servers for Real-Time Tasks on Multi-Core GPU-Integrated Embedded Systems
  Seyemehdi Hosseinimotlagh and Hyoseung Kim (University of California, Riverside)
- Self-aware scheduling for mixed-criticality component-based systems
  Johannes Schlatow, Mischa Möstl, and Rolf Ernst (TU Braunschweig)
- Multiprocessor Synchronization of Periodic Real-Time Tasks Using Dependency Graphs
  Junjie Shi, Niklas Ueter, Georg von der Brueggen, and Jian-Jia Chen (TU Dortmund)

12:30–14:00 Lunch

14:00–15:30 Session 8: Systems and Applications II
- Virtualization on TrustZone-enabled Microcontrollers? Voilà!
  Sandro Pinto, Hugo Araújo, Daniel Oliveira, José Martins, and Adriano Tavares (Universidade do Minho)
- Re-thinking CNN Frameworks for Time-Sensitive Autonomous-Driying Applications: Addressing an Industrial Challenge
  Ming Yang, Joshua Bakita, and Thanh Vu (The University of North Carolina at Chapel Hill); Shige Wang (General Motors Research); F. Donelson Smith, James H. Anderson, and Jan-Michael Frahm (The University of North Carolina at Chapel Hill)
- Proving Real-Time Capability of Generic Operating Systems by System-Aware Timing Analysis
  Simon Schuster, Peter Wagemann, Peter Ulbrich, and Wolfgang Schröder-Preikschat (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU))
- Achieving Stagnation-Free Intermittent Computation with Boundary-Free Adaptive Execution
  Jongouk Choi (Virginia Tech); Hyunwoo Joe and Yongjoo Kim (ETRI); Changhee Jung (Virginia Tech)

15:30–16:00 Coffee Break

16:00–17:30 Session 9: Outstanding Papers
- Holistic Resource Allocation for Multicore Real-Time Systems
  Meng Xu, Linh Thi Xuan Phan, and Hyon-Young Choi (University of Pennsylvania); Yuhan Lin (Northeastern University); Haoran Li and Chenyang Lu (Washington University in St. Louis); Insup Lee (University of Pennsylvania)
- Denial-of-Service Attacks on Shared Cache in Multicore: Analysis and Prevention
  Michael Bechtel and Heechul Yun (University of Kansas)
- RTNF: Predictable Latency for Network Function Virtualization
  Saeed Abedi, Neeraj Gandhi, and Henri Maxime Demoulin (University of Pennsylvania); Yang Li and Yang Wu (Facebook); Linh Thi Xuan Phan (University of Pennsylvania)
- Chair’s closing remarks