

RTCSA 2023 Advance Program

Updated on August 4, 2023

		Room 302	Room 301
August 30 Wed	9:00	Opening and Keynote	
	10:30	Break	
	11:00	Session 1: Best Paper Candidates	NVMSA 1: Solid-State Drive
	12:30	Lunch Break	
	13:30	Session 2: Real-Time Systems 1	NVMSA 2: Invited Talk
	15:00	Break	
	15:30	Session 3: Embedded Systems 1	NVMSA 3: Security and Isolation
	17:30	Welcome Reception & Poster Presentations (Room 201)	
August 31 Thu	9:30	NVMSA Keynote	
	10:30	Break	
	11:00	Session 4: IoT, CPS, and Emerging Applications 1	NVMSA 4: Machine Learning in Memory
	12:30	Lunch Break	
	14:00	Sponsor Talk	
	15:00	Break	
	15:30	Session 5A: Real-Time Systems 2	Session 5B: Embedded Systems 2
	18:00	Banquet (Crowne Plaza - ANA Niigata, 15 min walk from TOKI MESSE)	
September 1 Fri	9:00	Session 6: Real-Time Systems 3	NVMSA 6: Tool and System Software
	10:30	Break	
	11:00	Session 7A: IoT, CPS, and Emerging Applications 2	Session 7B: Short Presentations
	12:15	Closing	

August 30 (Wed) 9:00 - 10:30, Room 302

Opening and Keynote

- Personalized Predictions of Clinical Outcomes and Treatment Response with Wearables and Machine Learning
Chenyang Lu (AIM Institute, Washington University in St. Louis)

August 30 (Wed) 11:00 - 12:30, Room 302

Session 1: Best Paper Candidates

Chairs: Nan Guan (City University of Hong Kong) and Hiroyuki Tomiyama (Ritsumeikan University)

- Timing Analysis of Embedded Software Updates
Ahmed El Yaacoub (Uppsala University), Luca Mottola (Politecnico di Milano & Uppsala University), Thiemo Voigt (Uppsala University & RISE), Philipp Rümmer (University of Regensburg & Uppsala University)
- PELSI: Power-Efficient Layer-Switched Inference
Ehsan Aghapour (University of Amsterdam), Dolly Sapra (University of Amsterdam), Andy D. Pimentel (University of Amsterdam), Anuj Pathania (University of Amsterdam)
- Self-supervised multi-LiDAR object view generation using single LiDAR
Yi-Hung Kuo (National Taiwan University, Taiwan), Chi-Sheng Shih (National Taiwan University, Taiwan), Hsiang-Jui Lin (National Taiwan University, Taiwan), Shih-Hao Hung (National Taiwan University, Taiwan; Mohamed bin Zayed University of Artificial Intelligence, Abu Dhabi)

August 30 (Wed) 13:30 - 15:00, Room 302

Session 2: Real-Time Systems 1

Chair: Pablo Gutiérrez Peón (TTTech Auto AG)

- Hardware Acceleration with Zero-Copy Memory Management for Heterogeneous Computing
Oren Bell (Washington University at St Louis, USA), Chris Gill (Washington University at St Louis, USA), Xuan Zhang (Washington University at St Louis, USA)
- BandWatch: A System-Wide Memory Bandwidth Regulation System for Heterogeneous Multicore
Eric Seals (University of Kansas), Michael Bechtel (University of Kansas), Heechul Yun (University of Kansas)
- IRQ Coloring and the Subtle Art of Mitigating Interrupt-generated Interference
Diogo Costa (Universidade do Minho, Portugal), Luca Cuomo (Huawei Pisa Research Center, Italy), Daniel Oliveira (Universidade do Minho, Portugal), Ida Maria Savino (Huawei Pisa Research Center, Italy), Bruno Morelli (Huawei Pisa Research Center, Italy), José Martins (Universidade do Minho, Portugal), Alessandro Biasci (Huawei Pisa Research Center, Italy), Sandro Pinto (Universidade do Minho, Portugal)

August 30 (Wed) 15:30 - 17:00, Room 302

Session 3: Embedded Systems 1

Chair: Shuo-Han Chen (National Taipei University of Technology)

- Memory-Aware DVFS Governing Policy for Improved Energy-Saving in the Linux Kernel
Philkyue Shin (Seoul National University, Republic of Korea), Dahun Kim (Seoul National University, Republic of Korea), Seongsoo Hong (Seoul National University, Republic of Korea)
- TEEVseL4: Trusted Execution Environment for Virtualized seL4-based Systems
Borna Blazevec (Technical University of Munich), Michael Peter (NIO GmbH), Mohammad Hamad (Technical University of Munich), Sebastian Steinhorst (Technical University of Munich)
- Improving Read Performance for LDPC-Based SSDs with Adaptive Bit Labeling on Vth States
Jia-Xin Hou (National Yang Ming Chiao Tung University, Taiwan), Li-Pin Chang (National Yang Ming Chiao Tung University, Taiwan)

August 30 (Wed) 17:30-19:30, Room 201

Poster Presentations

- Parameter Optimization for EDF-Like Scheduling of Self-Suspending Tasks
Mario Günzel (TU Dortmund University), Jian-Jia Chen (TU Dortmund University)
- Response-time Analysis of Fault-Tolerant Hard Real-Time Systems under Global Scheduling
Pourya Gohari (Eindhoven University of Technology (TU/e), The Netherlands), Jeroen Voeten (Eindhoven University of Technology (TU/e), The Netherlands), Mitra Nasri (Eindhoven University of Technology (TU/e), The Netherlands)
- Investigating Requirements and Expectations of Wearable Telexistence Robotic Systems
Abdullah Iskandar (Waseda University, Japan), Mohammed Al-Sada (Qatar University, Qatar), Osama Halabi (Qatar University, Qatar), Tatsuo Nakajima (Waseda University, Japan)
- Designing a 3D Human Pose Estimation-based VR Tennis Training System
Yuichiro Hiramoto (Waseda University, Japan), Mohammed Al-Sada (Qatar University, Qatar), Tatsuo Nakajima (Waseda University, Japan)
- Visualization System Using Virtual Reality for Work Improvement in Small and Medium Manufacturing Industries
Shogo Ogihara (Toyama Prefectural University, Japan), Tetsuro Kato (IoTry, Inc., Japan), Takafumi Kawasaki (Toyama Prefectural University, Japan), Yuki Okura (Toyama Prefectural University, Japan), Takeshi Iwamoto (Toyama Prefectural University, Japan)
- A Robot Arm-based Haptic Feedback System for Augmented Reality Applications
Daichi Watanabe (Waseda University, Japan), Mohammed Al-Sada (Qatar University, Qatar), Kodai Fuchino (Waseda University, Japan), Tatsuo Nakajima (Waseda University, Japan)
- Make PLOR Real-time and Fairly Decentralized
Tung Nguyen (Keio University, Japan), Hideyuki Kawashima (Keio University, Japan)
- T2Remoter: a Remote Table Tennis Coaching System Combining VR and Robotics
Kodai Fuchino (Waseda University, Japan), Mohammed Al-Sada (Qatar University, Qatar), Tatsuo Nakajima (Waseda University, Japan)
- Extending ROS Transform Library for Massive Autonomous Robots
Yushi Ogiwara (Keio University), Hideyuki Kawashima (Keio University)
- Analyzing Digital Services across the Compute Continuum using iFogSim
Saeedeh Baneshi (University of Amsterdam, The Netherlands), Ana Lucia Varbanescu (University of Amsterdam, The Netherlands), Anuj Pathania (University of Amsterdam, The Netherlands), Benny Akesson (University of Amsterdam; TNO-ESI, The Netherlands), Andy Pimentel (University of Amsterdam, The Netherlands)
- ILP based Mapping for Elastic CGRAs
Makoto Saito (The University of Tokyo, Japan), Takuya Kojima (The University of Tokyo, Japan), Hideki Takase (The University of Tokyo, Japan), Hiroshi Nakamura (The University of Tokyo, Japan)

August 31 (Thu) 11:00 - 12:30, Room 302

Session 4: IoT, CPS, and Emerging Applications 1

Chair: Tadaaki Tanimoto (Sony Semiconductor Solutions)

- Shared Dictionary Compression for Efficient Mobile Software Distribution
Jinheng Li (City University of Hong Kong, China), Qiao Li (Xiamen University, China), Qingan Li (Wuhan University, China), Chun Jason Xue (City University of Hong Kong, China)
- A Comparison of Transformer and AR-SI Oracle For Control-CPS Software Fault Localization
Shiyu Zhang (The Hong Kong Polytechnic University, China), Wenxia Liu (Nanjing University, China), Qixin Wang (The Hong Kong Polytechnic University, China), Lei Bu (Nanjing University, China), Yu Pei (The Hong Kong Polytechnic University, China)
- Accelerating Scan Transaction with Node Locking
Kodai Doki (Keio University), Takashi Hoshino (Cybozu Labs, Inc.), Hideyuki Kawashima (Keio University)

August 31 (Thu) 14:00 - 15:00, Room 302

Sponsor Talk

- The Future of Computing - bits/neurons/qubits –
Shintaro Yamamichi (IBM Research Semiconductors, IBM Japan Ltd.)

August 31 (Thu) 15:30 - 17:00, Room 302

Session 5A: Real-Time Systems 2

Chair: Mario Guenzel (TU Dortmund)

- LAG-based Analysis for Preemptive Global Scheduling with Dynamic Cache Allocation
Yuhan Lin (Northeastern University, China), Jinghao Sun (Dalian University of Technology, China), Qingxu Deng (Northeastern University, China), Meiling Han (Nanjing University of Posts and Telecommunications, China), Shumo Wang (Northeastern University, China)
- Reducing Response-Time Bounds via Global Fixed Preemption Point EDF-like Scheduling
Joseph Goh (University of North Carolina at Chapel Hill, USA), James H. Anderson (University of North Carolina at Chapel Hill, USA)
- Dynamic Deterministic Quality of Service Model with Behavior-Adaptive Latency Bounds
Robin Laidig (University of Stuttgart, Germany), Frank Dürr (University of Stuttgart, Germany), Kurt Rothermel (University of Stuttgart, Germany), Stefan Wildhagen (University of Stuttgart, Germany), Frank Allgöwer (University of Stuttgart, Germany)

August 31 (Thu) 15:30 - 17:00, Room 301

Session 5B: Embedded Systems 2

Chair: Li-Pin Chang (National Yang Ming Chiao Tung University)

- RDMA-Based Deterministic Communication Architecture for Autonomous Driving
Hazem Abaza (Huawei Munich Research Center; Technische Universität Dortmund, Germany), Abhinaba Habishyashi (Technische Universität Dresden, Germany), Debayan Roy (Technische Universität Dortmund, Germany), Andrea Bastoni (Technische Universität München, Germany), Zain A. H. Hammadeh (German Aerospace Center, Germany), Shiqing Fan (Technische Universität Dortmund, Germany), Selma Saidi (Huawei Munich Research Center, Germany), Sergey Tverdyshev (Technische Universität Dortmund, Germany)
- Machine Learning Techniques for Understanding and Predicting Memory Interference in CPU-GPU Embedded Systems
Alessio Masola (University of Modena and Reggio Emilia, Italy), Nicola Capodiecì (University of Modena and Reggio Emilia, Italy), Benjamin Rouxel (University of Modena and Reggio Emilia, Italy), Giorgia Franchini (University of Modena and Reggio Emilia, Italy), Roberto Cavicchioli (University of Modena and Reggio Emilia, Italy)
- Traffic Injection Regulation Protocol based on free-time slots requests
Yilian Ribot González (CISTER Research Centre, ISEP, IPP, Portugal), Geoffrey Nelissen (Eindhoven University of Technology, The Netherlands), Eduardo Tovar (CISTER Research Centre, ISEP, IPP, Portugal)

September 1 (Fri) 9:00 - 10:30, Room 302

Session 6: Real-Time Systems 3

Chair: Diogo Costa (Universidade do Minho)

- Time-Sensitive Networking's Scheduled Traffic Implementation on IEEE 802.11 COTS Devices
Pablo Gutiérrez Peón (TTTech Computertechnik AG, Austria; Mälardalen University, Sweden), Paraskevas Karachatzis (TTTech Computertechnik AG, Austria), Wilfried Steiner (TTTech Computertechnik AG, Austria), Elisabeth Uhlemann (Mälardalen University, Sweden)
- Advanced Modeling and Analysis of Individual and Combined TSN Shapers in OMNeT++
Rubi Debnath (Technical University of Munich, Germany), Philipp Hortig (Technical University of Munich, Germany), Luxi Zhao (Beihang University, China), Sebastian Steinhorst (Technical University of Munich, Germany)
- DDS Implementations as Real-Time Middleware - A Systematic Evaluation
Vincent Bode (Technical University of Munich, Germany), Carsten Trinitis (Technical University of Munich, Germany), Martin Schulz (Technical University of Munich, Germany), David Buettner (Siemens AG, Germany), Tobias Preclik (Siemens AG, Germany)

September 1 (Fri) 11:00 - 12:00, Room 302

Session 7A: IoT, CPS, and Emerging Applications 2

Chair: Seongsoo Hong (Seoul National University)

- Safety-Aware Implementation of Control Tasks via Scheduling with Period Boosting and Compressing
Shengjie Xu (The University of North Carolina at Chapel Hill, USA), Bineet Ghosh (The University of North Carolina at Chapel Hill, USA), Clara Hobbs (The University of North Carolina at Chapel Hill, USA), P.S. Thiagarajan (The University of North Carolina at Chapel Hill, USA; Chennai Mathematical Institute, India), Prachi Joshi (General Motors, USA), Samarjit Chakraborty (The University of North Carolina at Chapel Hill, USA)
- Timing-Aware ROS2 Architecture and System Optimization
Harun Teper (TU Dortmund University, Germany), Tobias Betz (TU Munich, Germany), Georg von der Brüggen (TU Dortmund University, Germany), Kuan-Hsun Chen (University of Twente, The Netherlands), Johannes Betz (TU Munich, Germany), Jian-Jia Chen (TU Dortmund University, Germany)

September 1 (Fri) 11:00 - 12:15, Room 301

Session 7B: Short Presentations

Chair: Toshiaki Aoki (Japan Advanced Institute of Science and Technology)

- An Integrated Real-Time and Security Scheduling Framework for CPS
Kriti Kansal (Virginia Tech), Thidapat Chantem (Virginia Tech), Nathan Fisher (Wayne State University), Sanjoy Baruah (Washington University in St. Louis)
- Efficient Response Time Bound for Typed DAG Tasks
Qingqiang He (The Hong Kong Polytechnic University, China), Yongzheng Sun (The Hong Kong Polytechnic University, China), Mingsong Lv (The Hong Kong Polytechnic University, China), Weichen Liu (Nanyang Technological University, Singapore)
- Parameterized Workload Adaptation for Fork-Join Tasks with Dynamic Workloads and Deadlines
Marion Sudvarg (Washington University in St. Louis), Jeremy Buhler (Washington University in St. Louis), Roger D. Chamberlain (Washington University in St. Louis), Chris Gill (Washington University in St. Louis), Jim Buckley (Washington University in St. Louis), Wenlei Chen (University of Minnesota)
- Improved Bus Contention Analysis for 3-Phase Tasks
Jatin Arora (CISTER, ISEP, Portugal), Syed Aftab Rashid (CISTER, ISEP; VORTEX CoLab, Portugal), Geoffrey Nelissen (Eindhoven University of Technology, The Netherlands), Cláudio Maia (CISTER, ISEP, Portugal), Eduardo Tovar (CISTER, ISEP, Portugal)
- Accelerating The Permute And N-gram Operations For Hyperdimensional Learning in Embedded Systems
Pere Vergés (University of California), Igor Nunes (University of California), Mike Heddes (University of California), Tony Givargis (University of California), Alexandru Nicolau (University of California)