

# RTCSA 2024 Advance Program

Updated on July 10, 2024

| Date             | Time  | Grand Ballroom A  | Grand Ballroom C                                 |
|------------------|-------|---|--|
| August 21<br>Wed | 13:00 | RTCSA & NVMSA Opening   |  |
|                  | 13:30 | RTCSA Keynote 1   |  |
|                  | 14:30 | Break   |  |
|                  | 14:50 | NVMSA Keynote   |  |
|                  | 15:50 | Break   |  |
|                  | 16:10 | Session 1: Best Paper Candidates                                | NVMSA Session 1: Long Live SSD!                  |
|                  | 17:40 | Break   |  |
|                  | 18:00 | Welcome Reception & Poster Presentation (Grand Ballroom B)      |  |
| August 22<br>Thu | 9:00  | RTCSA Keynote 2   |  |
|                  | 10:00 | Break   |  |
|                  | 10:30 | Session 2: Sensor Data Fusion and Out-of-Distribution Detection | NVMSA Session 2: Key-Value Stores                |
|                  | 12:00 | Lunch Break   |  |
|                  | 14:00 | Session 3: Autonomous Driving Systems                           | NVMSA Session 3: Improving Reads and Reliability |
|                  | 15:30 | Break   |  |
|                  | 16:00 | Session 4: Cache, Middleware, and Synchronization               | NVMSA Session 4: Architecture and Scheduling     |
|                  | 18:00 | Banquet   |  |
| August 23<br>Fri | 9:00  | Session 5: Multi-core Embedded Systems                          |  |
|                  | 10:00 | Break   |  |
|                  | 10:30 | Session 6: Networks   |  |
|                  | 12:00 | Closing   |  |

# Detailed Program of Technical Sessions (Day 1)

**August 21 (Wed) 13:15 - 14:15, Grand Ballroom A,**

## **RTCSA Keynote 1**

- Driving the Future of Mobility: Real-Time Systems in Software-Defined Vehicles  
Seongsoo Hong (Seoul National University, Republic of Korea)

**August 21 (Wed) 14:50 - 15:50, Grand Ballroom A,**

## **NVMSA Keynote 1**

- TBA  
Sam H. Noh (Virginia Tech College of Engineering, USA)

**August 21 (Wed) 16:10 - 17:40, Grand Ballroom A,**

## **Session 1: Best Paper Candidates**

Chair: Kyong Hoon Kim (Kyungpook National University, Republic of Korea)

- EarlyBird : Energy belongs to those who wake up early  
Hugo Reymond(Univ Rennes, Inria, CNRS, IRISA, France), Jean-Luc Béchenne(Nantes Université, École Centrale Nantes, CNRS, LS2N, France), Mikaël Briday(Nantes Université, École Centrale Nantes, CNRS, LS2N, France), Sébastien Faucou(Nantes Université, École Centrale Nantes, CNRS, LS2N, France), Isabelle Puaut(Univ Rennes, Inria, CNRS, IRISA, France), Erven Rohou(Univ Rennes, Inria, CNRS, IRISA, France)
- Improved Memory Contention Analysis for the 3-Phase Task Model  
Jatin Arora(CISTER, ISEP; VORTEX CoLab, Portugal), Syed Aftab Rashid(Hitachi Energy Research, Switzerland), Geoffrey Nelissen(Eindhoven University of Technology, The Netherlands), Cláudio Maia(CISTER, ISEP, Portugal), Eduardo Tovar(CISTER, ISEP, Portugal)
- RTIL: Real-Time Inference of Large Language Models on Memory-Constrained GPU Devices  
Juxin Niu(City University of Hong Kong, Hong Kong SAR), Wei Zhang(Shandong University, China), Chun Jason Xue(Mohamed bin Zayed University of Artificial Intelligence, UAE), Nan Guan(City University of Hong Kong, Hong Kong SAR)

**August 21 (Wed) 18:00-20:00, Grand Ballroom B,**

## **Poster Presentations**

Chair: Sangeun Oh (Ajou University, Republic of Korea) and BaekGyu Kim (DGIST, Republic of Korea)

- Cooperative Network-Computation Load Balancing Simulator for Vehicular Edge Computing  
Juho Song(DGIST, Republic of Korea), BaekGyu Kim(DGIST, Republic of Korea), Jeongho Kwak(DGIST, Republic of Korea), Ji-Woong Choi(DGIST, Republic of Korea), Hoon Sung Chwa(DGIST, Republic of Korea)
- One-Shot Sparse Neural Architecture Search for Resource-Constrained Devices  
Shenghui Song(Kyung Hee University, Republic of Korea), Jan-Nico Zaech(Sofia University, Bulgaria), Seonyeong Heo(Kyung Hee University, Republic of Korea)
- Preliminary Approach to Parallelizing Autonomous Driving Applications Using High-Performance Many-core Processor  
Xuankeng He(Saitama University, Japan), Takuya Azumi(Saitama University, Japan)
- Preliminary Modeling of Energy-Aware Integrated Allocations in Robotic Mobile Fulfillment Systems  
Kyujin Kyung(DGIST, Republic of Korea), Deepak Gangadharan(IIT Hyderabad, India), BaekGyu Kim(DGIST, Republic of Korea)
- Task-level Thermal Modeling for Temperature Management of Edge TPU  
Changhun Han(Ajou University, Republic of Korea), Sangeun Oh(Ajou University, Republic of Korea)

# Detailed Program of Technical Sessions (Day 2)

**August 22 (Thu) 09:00 - 10:00, Grand Ballroom A,**  
**RTCSA Keynote 2**

- The Future of Processing Units: From CPU to GPU and Beyond  
Won Woo Ro (Yonsei University, Republic of Korea)

**August 22 (Thu) 10:30 - 12:00, Grand Ballroom A,**  
**Session 2: Sensor Data Fusion and Out-of-Distribution Detection**  
Chair: Bryan Donyanavard (San Diego State University, USA)

- Timely Fusion of Surround Radar/Lidar for Object Detection in Autonomous Driving Systems  
Wenjing Xie(City University of Hong Kong, Hong Kong SAR), Tao Hu(City University of Hong Kong, Hong Kong SAR), Neiwien Ling(Yale University, USA), Guoliang Xing(City University of Hong Kong, Hong Kong SAR), Chun Jason Xue(Mohamed bin Zayed University of Artificial Intelligence, UAE), Nan Guan(City University of Hong Kong, Hong Kong SAR)
- Compressing VAE-Based Out-of-Distribution Detectors for Embedded Deployment  
Aditya Bansal(Nanyang Technological University, Singapore), Michael Yuhas(Nanyang Technological University, Singapore), Arvind Easwaran(Nanyang Technological University, Singapore)
- Improving the Reaction Latency Analysis of Message Synchronization in ROS  
Chenhao Wu(SK LCS, China), Ruoxiang Li(City University of Hong Kong, Hong Kong SAR), Naijun Zhan(Peking University; SK LCS, China), Nan Guan(City University of Hong Kong, Hong Kong SAR)

**August 22 (Thu) 14:00 - 15:30, Grand Ballroom A,**  
**Session 3: Autonomous Driving Systems**  
Chair: Arvind Easwaran (Nanyang Technological University, Singapore)

- M-DRTA: A Distributed Runtime Monitoring and Assurance Framework for Multi-vehicle Behavior Planning  
Yanfei Peng(Dalian University of Technology, China), Guozhen Tan(Dalian University of Technology, China), Xiang Wang(Dalian University of Technology, China)
- A Containerized Microservice Architecture for a ROS 2 Autonomous Driving Software: An End-to-End Latency Evaluation  
Tobias Betz(Technical University of Munich, Germany), Long Wen(Technical University of Munich, Germany), Fengjunjie Pan(Technical University of Munich, Germany), Gemb Kaljavesi(Technical University of Munich, Germany), Alexander Zuepke(Technical University of Munich, Germany), Andrea Bastoni(Technical University of Munich, Germany), Marco Caccamo(Technical University of Munich, Germany), Alois Knoll(Technical University of Munich, Germany), Johannes Betz(Technical University of Munich, Germany)
- A Formally Verified Leader Election Algorithm for Autonomous Driving Systems  
Ryuta Kambe(TIER IV, Inc., Japan), Benjamin Gilby(TIER IV, Inc., Japan), Yuuki Takano(TIER IV, Inc., Japan)

**August 22 (Thu) 16:00 - 17:30, Grand Ballroom A,**  
**Session 4: Cache, Middleware, and Synchronization**  
Chair: Qixin Wang (The Hong Kong Polytechnic University, Hong Kong SAR)

- On the integration of DDS and AFDX standards  
Hector Perez(Universidad de Cantabria, España), J. Javier Gutiérrez(Universidad de Cantabria, España)
- Duration-based Instruction Cache Locking  
Wafic Lawand(University of Waterloo, Canada), Rodolfo Pellizzoni(University of Waterloo, Canada)
- PTP-Synchronized Tri-Level Sync Generation for Networked Multi-Sensor Systems  
Christoph Riggers(Leibniz University Hannover, Germany), Jens Schleusner(Leibniz University Hannover, Germany), Oliver Renke(Leibniz University Hannover, Germany), Holger Blume(Leibniz University Hannover, Germany)

# Detailed Program of Technical Sessions (Day 3)

**August 23 (Fri) 9:00 - 10:00, Grand Ballroom A,**

## **Session 5: Multi-core Embedded Systems**

Chair: Youngeun Cho (Hanyang University, Republic of Korea)

- A Compact Real-Time Thermal Imaging System Based on Heterogeneous System-on-Chip  
Hyun Woo Oh(Hanwha Systems, Republic of Korea), Cheol-Ho Choi(Hanwha Systems, Republic of Korea), Jeong Woo Cha(Hanwha Systems, Republic of Korea), Hyunmin Choi(Hanwha Systems, Republic of Korea), Jung-Ho Shin(Hanwha Systems, Republic of Korea), Joon Hwan Han(Hanwha Systems, Republic of Korea)
- Optimal Real-Time Task Allocation in Heterogeneous Multi-Core Embedded Systems  
David Doose(ONERA, France), Youcef Bouchebaba(ONERA, France), Alfonso Mascarenas Gonzalez(ONERA, France)

**August 23 (Fri) 10:30 - 12:00, Grand Ballroom A,**

## **Session 6: Networks**

Chair: Jaewoo Lee (Chung-Ang University, Republic of Korea)

- Real-time Beamforming Testbed and Tracking Relay for mmWave Applications  
Lorenzo Bisulli(Politecnico di Milano, Italy), Davide Scazzoli(Politecnico di Milano, Italy), Francesco Linsalata(Politecnico di Milano, Italy), Maurizio Magarini(Politecnico di Milano, Italy), Marouan Mizmizi(Politecnico di Milano, Italy), Christian Mazzucco(Politecnico di Milano, Italy), Umberto Spagnolini(Politecnico di Milano, Italy)
- Coordinator-based Proxy Mobile IPv6 for Group Mobility Management in CoAP-based WBAN Networks  
Muhammad Mahdi(Bahria University, Pakistan), Moneeb Gohar(Bahria University, Pakistan), Seok-Joo Koh(Kyungpook National University, Republic of Korea)
- Optimising for Dense Deployments in Commercial Ambient Human Sensing with WiFi CSI  
Glenn Forbes(Robert Gordon University, Scotland), Stewart Massie(Robert Gordon University, Scotland)