IEEE MOST 2023
Detroit, MI, USA – May 17-19, 2023

IEEE MOST conference program

Day 1 (Wednesday, May 17, 2023) – Main Conference

7:30 – 8:15	**Breakfast**
8:15 – 8:30	**Open Remarks: General chairs and TPC chairs** ○ Junshan Zhang, University of California at Davis ○ Weisong Shi, University of Delaware ○ Oleg Gusikhin, Ford Motor Company
8:30 – 9:30	**Keynote Speech 1:** **Speaker:** Vishnu Sundaram, SVP of Cockpit and Connected Services at Stellantis **Session Chair:** Weisong Shi
9:30 – 9:45	**Coffee Break**
9:45 – 11:15	**Conference Session I (90 minutes) – AI-enabled mobility technologies** **Session Chair:** **Sniffer Faster R-CNN: A Joint Camera-Lidar Object Detection Framework with Proposal Refinement** Sudip Dhakal, Qi Chen, Deyuan Qu, Dominic Carrillo, Qing Yang, Song Fu University of North Texas **FLOW: A Scalable Multi-Model Federated Learning Framework on the Wheels** Yongtao Yao, University of Delaware Nejib Ammar, Toyota InfoTech Weisong Shi, University of Delaware **RAMRL: Augmented Multimodal Reinforcement Learning for Robust On-Ramp** Merging Gaurav Bagwe, Michigan Technological University Xiaoyong Yuan, Michigan Technological University Xianhao Chen, University of Hong Kong Lan Zhang, Michigan Technological University
11:15 – 13:00	**Lunch and Break**

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13:00 – 14:30	**Panel: Mobility: Challenges and Opportunities** **Moderator:** Weisong Shi, University of Delaware **Panelists:** ○ Sushanta Das, Technical Director, American Center for Mobility ○ Wende Zhang, Director, ADAS Sensing and Localization SW ○ Cal Coplai, Staff Technical Program Manager, Cavnue ○ Kristin Slanina, Chief Innovation Officer at ParkMyFleet ○ Luke Harvey, Principal Partner Solution Architect at AWS
14:30 – 14:45	**Coffee Break**
14:45 – 16:15	**Conference Session II (90 minutes) – Indoor Mobility** **Session Chair:** **FollowMe: A Robust Framework for the Guidance of Sensorless Indoor Mobile Robots** Sanjith Udupa, Novi High School Liangkai Liu, Wayne State University Weisong Shi, University of Delaware **DC-HEN: A Deadline-aware and Congestion-relieved Hierarchical Emergency Navigation Algorithm for Ship Indoor Environments** Xiaoling Zeng, Kezhong Liu, Yuting Ma, Mozi Chen School of Navigation, Wuhan University of Technology **m-BMC: Exploration of Magnetic Field Measurements for Indoor Positioning Using mini-Batch Magnetometer Calibration** Hamaad Rafique, Davide Patti, Maurizio Palesi, Vincenzo Catania University of Catania
16:15 – 16:30	**Coffee Break**

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16:30 – 18:00	**Conference Session III (90 minutes) – Real-time Mobility** **Session Chair:** **Real-Time Vehicle Localization Using Steering Angle in Urban Cities** Raef Abdallah, Wayne State University Baofu Wu, Hangzhou Dianzi University Jian Wan, Hangzhou Dianzi University **Modeling and Property Analysis of the Message Synchronization Policy in ROS** Ruoxiang LI, Cityu University of Hong Kong Zheng Dong, Wayne State University Jen-Ming Wu, Hon Hai Research Institute Chun Jason Xue, City University of Hong Kong Nan Guan, City University of Hong Kong **Conservative Estimation of Perception Relevance of Dynamic Objects for Safe Trajectories in Automotive Scenarios** Ken Mori, Technische Universität Darmstadt Kai Storms, Technische Universität Darmstadt Steven Peters, Technische Universität Darmstadt
18:00 – 19:00	**Reception**
19:00 – 20:00	**Award Ceremony**

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Day 2 (Thursday, May 18, 2023) – Main Conference

7:30 – 8:30	**Breakfast**
8:30 – 9:30	**Keynote Speech 1:** **Speaker:** Robert Day, Director of Arm's Automotive Go-to-Market activities for North America **Session Chair:** Weisong Shi
9:30 – 9:45	**Coffee Break**
9:45 – 11:15	**Conference Session IV (90 minutes) – Mobility as a service** **Session Chair:** **Autonomous Shuttle Integrated in a Communication and Sensing City Infrastructure** João Amaral, João Viegas, Bruno Lemos, Pedro Almeida, Rodrigo Rosmaninho, Gonçalo Perna, Pedro Rito, Susana Sargento Instituto de Telecomunicações, Universidade de Aveiro **Enhanced Multiple DBSCAN Algorithm for Traffic Detection Using mmWave Radar** Bao Ming Ding, McMaster University Yixin Huangfu, McMaster University Howard Zhang, McMaster University Ching-Hung Tan, McMaster University Saeid Habibi, McMaster University **Wind Sensitivity of Electric Vehicle Energy Consumption and Influence on Range Prediction and Optimal Vehicle Routes** Trung Tran, University of Michigan Ilya Kolmanovsky, University of Michigan Erik Biberstein, Ford Motor Company Omar Makke, Ford Motor Company Marina Tharayil, Ford Motor Company Oleg Gusikhin, Ford Motor Company
11:15 – 13:30	**Lunch and Break**

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13:30 – 15:00	**Conference Session V (90 minutes) – Planning and Control Technologies** **Session Chair:** **Effects of Neural Network Architecture on Topography Estimation from Satellite Imagery for Multi-Terrain Autonomous Vehicle Path Planning and Control** Ryan Lynch, North Carolina State University Sumedh Beknalkar, North Carolina State University Jack Lynch, North Carolina State University Andre Mazzoleni, North Carolina State University Matthew Bryant, North Carolina State University **Intervention Request Planning with Operator Capability Model for Human-Automation Cooperative Recognition** Atsushi Kuribayashi, Nagoya University Eijiro Takeuchi, TierIV Inc. Alexander Carballo, Nagoya University Yoshio Ishiguro, The University of Tokyo Kazuya Takeda, Nagoya University **Improving GPS-based Mode of Transport Detection in Multi-Modal Trips using Stop Analysis** Jens Klinker, Technical University of Munich Mariana Avezum-Mercer, Technical University of Munich Stephan M. Jonas, University Hospital Bonn
15:00 – 15:15	**Coffee Break**
	Conference Session VI (90 minutes) – Emerging technologies in Mobility **Session Chair:** **Predictive World Models from Real-World Partial Observations** Robin Karlsson, Nagoya University Alexander Carballo, Gifu University Keisuke Fujii, Nagoya University Kento Ohtani, Nagoya University Kazuya Takeda, Nagoya University

15:15 – 17:15	**SLAM Sharing Among Heterogeneous Sensors** Ren Zhong, Wayne State University Liangkai Liu, Wayne State University Weisong Shi, University of Delaware **Presenting a Statistical Approach for Transforming Standardized German Traffic Surveys into Origin-Destination Matrices** Jens Klinker, Technical University of Munich Joe Yu, Technical University of Munich Mariana Avezum-Mercer, Vay Technology GmbH Stephan M. Jonas, University Hospital Bonn **Dual-Weight Particle Filter for Radar-Based Dynamic Bayesian Grid Maps** Max Peter Ronecker, Technical University Graz Michael Stolz, Technical University Graz Daniel Watzenig, Technical University Graz
17:15 – 19:00	**Reception/Demos and Posters**

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Day 3 (Friday, May 19, 2023) – Main Conference

8:00 – 9:00	**Breakfast**
9:00 – 10:30	**Conference Session VII (90 minutes) – Validation and Testing** **Session Chair:** **A Strategy for Boundary Adherence and Exploration in Black-Box Testing of Autonomous Vehicles** John M. Thompson, Embry-Riddle Aeronautical University Quentin Goss, Embry-Riddle Aeronautical University Mustafa Ilhan Akbas, Embry-Riddle Aeronautical University **Sybil Detection in Connected Vehicle Systems via Angle-of-Arrival Estimation** Tianye Ma, University of Delaware Yidan Hu, Rochester Institute of Technology Aishah Aseeri, King Abdulaziz University Mark Nejad, University of Delaware Rui Zhang, University of Delaware **Integration of Formal Specification and Traffic Simulation for Scenario-Based Validation** Quentin Goss, Embry-Riddle Aeronautical University Mustafa Ilhan Akbas, Embry-Riddle Aeronautical University
11:30 – 13:30	**Lunch and Break**
13:30 – 16:00	**Tutorial: Autoware – ROS-based OSS for Autonomous Driving** **Speaker:** Alexander Carballo, Tier IV
	Autonomous vehicles exhibition
16:00 – 16: 15	Conference Closing: Farewell from the General Chair