2020 IEEE 3rd Connected and Automated Vehicles Symposium

IEEE CAVS 2020 Program

Welcome by Javier Gozalvez, Universidad Miguel Hernandez de Elche, Spain

Keynote by Prashant Tiwari, Toyota InfoTech Labs, USA

Title: ***CAV Enabling Mobility Services Opportunities***

(Wednesday, 18 Nov. in the mock schedule)

Keynote by Joe LaChapell, Luminar Technologies, USA

Title: ***Cooperative Perception – Market and System Design Considerations***

(Thursday, 19 Nov. in the mock schedule)

Keynote by Richard Yu, Carleton University, Canada

Title: ***Internet of Intelligence for Connected and Autonomous Vehicles***

(Thursday, 19 Nov. in the mock schedule)

Cooperative Driving (Wednesday, 18 Nov. in the mock schedule)

1. Vehicle maneuver-based long-term trajectory prediction at intersection crossings
Richardos Drakoulis, ICCS, Greece; Anastasia Bolovinou, ICCS, Greece; Georgios Drainakis, ICCS, Greece; and Angelos Amditis, ICCS, Greece

2. Simulation Framework for Platooning based on Gazebo and SUMO
Kenan Ahmic, Intelligent Systems Hub, Bosnia and Herzegovina; Anel Tahirbegovic, Intelligent Systems Hub, Bosnia and Herzegovina; Adnan Tahirovic, University of Sarajevo, Bosnia and Herzegovina; Daniel Watzenig, Graz University of Technology, Austria; Georg Stettinger, Virtual Vehicle Research GmbH, Austria

3. Interaction-aware risk assessment: focus on the lateral intention
Jorge Villagra, CSIC, Spain; Antonio Artuñedo, CSIC, Spain; Vinicius Trentin, CSIC, Spain; and Jorge Godoy, CSIC, Spain

4. Multi-Vehicle Coordination and Real-time Control of Connected and Automated Vehicles at Roundabouts
Sina Alighanbari, University of Waterloo, Canada; and Nasser L. Azad, University of Waterloo, Canada

5. Platoon String Stability: A Passivity Perspective
Chiedu N. Mokogwu, Dept. of Elec. & Comp. Eng., Queen's University; Keyvan Hashtrudi-Zaad, Dept. of Elec. & Comp. Eng., Queen's University

6. Collaborative Collision Avoidance for CAVs in Unpredictable Scenarios
Dhruvkumar Patel, University of Texas at Dallas, United States; and Rym Zalila-Wenkstern, University of Texas at Dallas, United States

Sensing (Wednesday, 18 Nov. in the mock schedule)

1. Evaluation of Measurement Space Representations of Deep Multi-Modal Object Detection for Extended Object Tracking in Autonomous Driving
Lino Antoni Giefer, University of Bremen, Germany; Razieh Khamsehashari, University of Bremen, Germany; and Kerstin Schill, University of Bremen, Germany

2. A Methodology to Determine Test Scenarios for Sensor Constellation Evaluations
Monish Gogri, Technical University of Graz, Austria;Maike Hartstern, Karlsruhe Institute of Technology, Germany;Wilhelm Stork, Karlsruhe Institute of Technology, Germany; and Thomas Winsel, University of Applied Sciences, Kempten, Germany

3. Validation and testing of the decentralized architecture for the occupancy grid filtering pipeline
Kenan Softić, VIRTUAL VEHICLE Research GmbH, Graz, Austria; Haris Šikić, VIRTUAL VEHICLE Research GmbH, Graz, Austria; Amar Čivgin, VIRTUAL VEHICLE Research GmbH, Graz, Austria; Georg Stettinger, VIRTUAL VEHICLE Research GmbH, Graz, Austria; and Daniel Watzenig, VIRTUAL VEHICLE Research GmbH, Graz, Austria and Graz University of Technology, Graz, Austria

4. A Probabilistic Model for Visual Driver Gaze Approximation from Head Pose Estimation
Mohsen Shirpour, University of Western Ontario, Canada; Steven Beauchemin, University of Western Ontario, Canada; and Michael Bauer, University of Western Ontario, Canada

Cooperative Sensing (Wednesday, 18 Nov. in the mock schedule)

1. Cooperative Road Geometry Estimation via Sharing Processed Camera Data
Ahmed Hamdi Sakr, Toyota Motor North America R&D, United States

2. Bandwidth-Adaptive Feature Sharing for Cooperative LIDAR Object Detection
Ehsan Emad Marvasti, University of Central Florida, United States; Arash Raftari, University of Central Florida, United States; Amir Emad Marvasti, University of Central Florida, United States; and Yaser P. Fallah, University of Central Florida, United States

3. Machine Learning Techniques for Vehicle Matching with Non-Overlapping Visual Features
Samuel Thornton, UC San Diego, United States; and Sujit Dey, UC San Diego, United States

4. Pose-graph based Crowdsourced Mapping Framework
Anweshan Das, Eindhoven University of Technology, Netherlands; Joris IJsselmuiden, Track32, Netherlands; and Gijs Dubbelman, Eindhoven University of Technology, Netherlands

V2X Networks and Localization (Thursday, 19 Nov. in the mock schedule)

1. Performance Analysis of Cellular-V2X with Adaptive & Selective Power Control
Md Saifuddin, University of Central Florida, United States; Mahdi Zaman, University of Central Florida, United States; Behrad Toghi, University of Central Florida, United States; Yaser P Fallah, University of Central Florida, United States; and Jayanthi Rao, Ford Motor Company, United States

2. Sequence Prediction-based Proactive Caching in Vehicular Content Networks
Qiao Wang, University of York, United Kingdom; and David Grace, University of York, United Kingdom

3. A MEC-assisted Vehicle Platooning Control through Docker Containers
Salvatore Dabbene, Università Mediterranea di Reggio Calabria, Italy; Christopher Lehmann, Technische Universität Dresden, Germany; Claudia Campolo, Università Mediterranea di Reggio Calabria, Italy; Antonella Molinaro, Università Mediterranea di Reggio Calabria, Italy; and Frank H. P. Fitzek, Technische Universität Dresden, Germany

4. A Context Aware and Traffic Adaptive Privacy Scheme in VANETs
Ikjot Saini, University of Windsor, Canada; Sherif Saad, University of Windsor, Canada; and Arunita Jaekel, University of Windsor, Canada

5. Cooperative Multi-Modal Localization in Connected and Autonomous Vehicles
Nikos Piperigkos, University of Patras, Greece; Aris S. Lalos, Athena Research Center, Greece; Kostas Berberidis, University of Patras, Greece; and Christos Anagnostopoulos, Athena Research Center, Greece

6. Location Information Verification in Future Vehicular Networks
Waheeda Jabbar, UNSW, Australia; Robert Malaney, UNSW, Australia; and Shihao Yan, Macquarie University, Sydney, Australia

Traffic Management (Thursday, 19 Nov. in the mock schedule)

1. Infrastructure Supported Automated Driving in Transition Areas – a Prototypic Implementation
Julian Schindler, German Aerospace Center (DLR), Germany; Robert Markowski, German Aerospace Center (DLR), Germany; Daniel Wesemeyer, German Aerospace Center (DLR), Germany; Baldomero Coll-Perales, Universidad Miguel Hernandez, Spain; Clarissa Böker, German Aerospace Center (DLR), Germany; and Saifullah Khan, German Aerospace Center (DLR), Germany

2. CORR: Collaborative On-Road Reputation
Baik Hoh, InfoTech Labs Toyota Motor North America R&D, United States; Seyhan Ucar, InfoTech Labs Toyota Motor North America R&D, United States; Pratham Oza, Virginia Tech, United States; Chinmaya Patnayak, Virginia Tech, United States; and Kentaro Oguchi, InfoTech Labs Toyota Motor North America R&D, United States

3. Formalizing Traffic Rules for Machine Interpretability
Klemens Esterle, fortiss GmbH, Germany; Luis Gressenbuch, fortiss GmbH, Germany; and Alois Knoll, Technical University of Munich, Germany

4. Utility of Traffic Information in Dynamic Routing: Is Sharing Information Always Useful?
Mohammad Shaqfeh, Texas A&M University at Qatar, Qatar; Salah Hessien, McMaster University, Canada; and Erchin Serpedin, Texas A&M University, United States

Connected and Automated Driving (Thursday, 19 Nov. in the mock schedule)

1. A Maneuver-based Urban Driving Dataset and Model for Cooperative Vehicle Applications
Behrad Toghi, University of Central Florida, United States; Divas Grover, University of Central Florida, United States; Mahdi Razzaghpour, University of Central Florida, United States; Rajat Jain, University of Central Florida, United States; Rodolfo Valiente, University of Central Florida, United States; Mahdi Zaman, University of Central Florida, United States; Ghayoor Shah, University of Central Florida, United States; and Yaser P. Fallah, University of Central Florida, United States

2. Extended H-infinity Filter Adaptation Based on Innovation Sequence for Advanced Ego-Vehicle Motion Estimation
Jasmina Zubaca, Graz University of Technology, Austria; Michael Stolz, Graz University of Technology, Austria; and Daniel Watzenig, Graz University of Technology, Austria

3. Hybrid Model Based Pre-Crash Severity Estimation for Automated Driving
Kilian Schneider, Technische Hochschule Ingolstadt, Germany; Maximilian Inderst, Technische Hochschule Ingolstadt, Germany; and Thomas Brandmeier, Technische Hochschule Ingolstadt, Germany

4. Evaluation of Sensor Tolerances and Inevitability for Pre-Crash Safety Systems in Real Case Scenarios
Robert Lugner, Technische Hochschule Ingolstadt, Germany; Daniel Vriesman, Technische Hochschule Ingolstadt, Germany; Maximilian Inderst, Technische Hochschule Ingolstadt, Germany; Gerald Joy Alphonso Sequeira, Technische Hochschule Ingolstadt, Germany; Niyathipriya Pasupuleti, Technische Hochschule Ingolstadt, Germany; Alessandro Zimmer, Technische Hochschule Ingolstadt, Germany; and Thomas Brandmeier, Technische Hochschule Ingolstadt, Germany

5. Look-ahead Horizon based Energy Optimization for Connected Hybrid Electric Vehicles
Fuguo Xu, Sophia University, Japan; and Tielong Shen, Sophia University, Japan

6. A Data-Driven Minimal Approach for CAN Bus Reverse Engineering
Alessio Buscemi, University of Luxembourg, Luxembourg; German Castignani, University of Luxembourg, Luxembourg; Thomas Engel, University of Luxembourg, Luxembourg; and Ion Turcanu, University of Luxembourg, Luxembourg

7. Prototyping EcoCAR Connected Vehicle Testing System Using DigiCAV Development Platform
Trevor Crain, Argonne National Laboratory, United States; Pawel Jaworski, HORIBA MIRA, United Kingdom; Ioannis Kyriakopoulos, HORIBA MIRA, United Kingdom; Richard Blachford, HORIBA MIRA, United Kingdom; and Brian Fabien, University of Washington, United States

Closing by Javier Gozalvez, Universidad Miguel Hernandez de Elche, Spain


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