

Special Session:

Advances in Intelligent Systems and Algorithms for Autonomous Driving and its Applications

in

2017 IEEE Symposium on Computational Intelligence in Vehicles and Transportation Systems (CIVTS'2017)

Theme and Scope of this Session:

Achieving autonomous operation of a vehicle whether fully or as a driver assisting technology in the real-world, requires advanced real-time systems and algorithms including environmental perception, localization, planning and control in addition to a vehicle platform supporting sensors and state of the art computational hardware and software.

Autonomous operations may demand that about one GB of data be processed each second in the vehicle's real-time operating system. This data will need to be analyzed quickly enough in order for the vehicle to react to changes in its surroundings in less than a second. This will demand new levels of vehicle intelligence and computational powers to help the vehicle determine when, how hard and how fast to brake, accelerate and/or steer based on analysis of range of variables from vehicles speed, road conditions, surrounding traffic, unpredictable behavior of pedestrians, bicyclists, and other cars while in the city to name just a few.

This special session will be a forum for the latest research in intelligent systems, algorithms, applications and challenges of autonomous driving. Topics for this special session include but are not limited to:

• Navigation, Guidance and Control of Autonomous Vehicles	• Autonomous Driving in Unstructured Environments
• Path planning for Autonomous Vehicles	• Localization for Autonomous Vehicles
• Lane Departure Warning/Lane Keeping Assistance	• Collision & Blind Spot Warning
• Pedestrian Detection	• Obstacle Detection
• Active Pedestrian Protection	• Collision Imminent Braking
• Collision Avoidance	• Vehicle Environment Perception
• Deep Learning for Machine Vision	• Synthetic Data for Deep Learning
• Driver State and Intent Recognition	• Vision, Radar, Lidar Systems and Processing in Vehicles
• Sensor Fusion for Autonomous Vehicles	• GPU Computing for Autonomous Vehicles
• Fault Tolerant Autonomous System Architectures	• Cooperative Driverless Vehicles
• Crowd Sourcing of Traffic Information	• Learning Autonomous Vehicles
• Cloud Computing in Autonomous Driving	• Automated Package Delivery Systems
• Ride Sharing Systems	• Ride Hailing systems

Organizers / Chairs:

Dr. Mahmoud Abou-Nasr (main contact, email: abounasr@ieee.org), Ford Motor Company
Justin Dauwels, Associate Professor, Nanyang Technological University, Singapore
Jungme Park, Ph.D. Assistant Professor, Kettering University, USA, jpark@kettering.edu
Weiwei Zhang, Ph.D, Assistant Professor, Shanghai University of Engineering Science, weiweiz@sues.edu.cn

Important dates

Paper submission deadline: July 16, 2017 Notification to authors: September 4th, 2017

Paper submission site: <http://www.ele.uri.edu/ieee-ssci2017/PaperSubmission.htm>