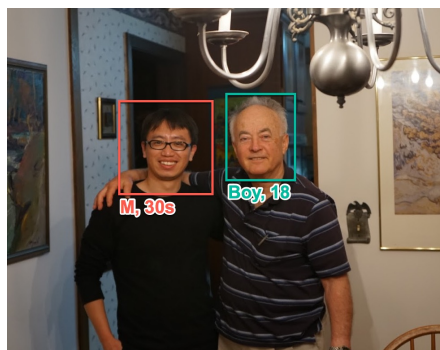


Title: Sensor Fusion for Autonomous Driving

Abstract: Autonomous driving poses unique challenges for real world sensor fusion systems due to the complex driving environment where autonomous vehicle finds itself in and interacts itself with surrounding objects. Precise knowledge of the relevant participants (e.g., vehicle/bicyclist/pedestrian) becomes a key component for the task of comprehensive environmental perception and scene understanding. We will talk about why/what/how autonomous driving is developed in Mercedes-Benz (Daimler AG) and the trend in Silicon Valley. We will introduce different environment representations from heterogeneous automotive sensors e.g. Radars, stereo/mono cameras and Lidars. The relevant state estimation algorithms, sensor fusion frameworks and evaluation procedures will be presented. A special interest will be put on Autonomous Driving in China; this is nowadays a tremendously active research/social field due to its scientific complexity, industrial strategy importance, and big social impact.

We address the talk to researchers/engineers/faculty members interested in cooperation on autonomous driving related topics and to Ph.D./M.S./bachelor students interested in an internship in Mercedes-Benz R&D, China (Beijing). Any further questions, please contact me at: ting.yuan@daimler.com or dr.ting.yuan@ieee.org



Dr. Ting Yuan is currently a Research Scientist at the Mercedes-Benz Research & Development North America, Inc., Sunnyvale, CA within the Autonomous Driving Department, where his fields of endeavor lie in detection, classification and tracking of moving/static objects using information from camera, Radar and Lidar systems, as well as data fusion for the multi-sensor systems. He received his Ph.D. degree from the Electrical and Computer Engineering Department at the University of Connecticut, Storrs, CT, USA in 2013. He has more than 10 years research/working experience in Object Tracking, Sensor Fusion and

Localization for aerospace and automotive applications.

He is an editorial board member at international society of information fusion (ISIF). He is an invited tutorial presenter on "Automotive Radar Systems at Daimler AG/Mercedes Benz: Past, Present, and Future" at 2016 IEEE Radar Conference in Philadelphia, PA (RadarConf2016). He is a regular lecturer at international Fusion Conference on "Sensor Fusion for Intelligence Vehicles". He is an author of the short course "Next Generation Sensor Fusion and Environment Perception for Automotive Intelligent Systems" at 2016 IEEE 19th International Conference on Intelligent Transportation Systems (ITSC 2016) in Rio de Janeiro, Brazil. He is a best paper award winner (1st runner-up) at IEEE International Conference on Multi-sensor Fusion and Integration for Intelligent Systems (2016 MFI) with his work "Object Tracking with De-autocorrelation Scheme for a Dynamic Occupancy Gridmap System". Most recently, he is an invited speaker for Auto:AI Audi 2018 (Berlin, Germany) at San Francisco on Perception, Imaging and Deep Driving Technologies for Future Cognitive Vehicles.