Future Automated and Connected Driving Technologies from Toyota

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Friday, September 26, 2014
3:30 – 4:30 pm • 1500 EECS

Abstract: Automated, connected, and fully-autonomous driving are hot topics in today's ground transportation community; an interest that is shared by members in this community from academia, industry, and government. Light vehicle manufacturers and suppliers are racing to lead the introduction of these technologies to their customers. Media reports and press releases are appearing daily that highlight technologies such as collision avoidance, automated parking, automated highway driving, vehicle platooning, and autonomous city driving.

This talk will originate from the manufacturer perspective, but will include details related to academia and government efforts. Particular focus will be given to sensing and control methods used within Toyota's automated highway driving technologies, and other technologies being developed by the Toyota Technical Center, right here in Ann Arbor, Michigan.

Biosketch: Derek Caveney (derek.caveney@tema.toyota.com) is a Manager within the Integrated Vehicle Systems department at the Toyota Technical Center, in Ann Arbor, Michigan. His team is supporting the global development of automated driving technologies for safety, comfort, and fuel-efficiency applications. He received the B.Sc.E. in applied mathematics from Queen's University, Kingston, Ontario, Canada, in 1999 and the M.Sc. and Ph.D. in mechanical engineering from the University of California, Berkeley, in 2001 and 2004, respectively. From 2004 until 2005, he was a visiting postdoctoral scholar with the Center for Collaborative Control of Unmanned Vehicles in Berkeley, California. Since joining Toyota in 2005, his research and development interests have focused on automated, connected, and cooperative systems for safety and mobility.