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Safe Autonomous Driving and Humans: Perception and Transitions

Abstract: These are truly exciting times especially for researchers and scholars active in robotics and intelligent systems fields. Fruits of their labor are enabling transformative changes in daily lives of general public. In this presentation we will focus on changes affecting our mobility on roads with highly automated intelligent vehicles. We specifically discuss issues related to the understanding of human agents interacting with the automated vehicle, either as occupants of such vehicles, or who are in the near vicinity of the vehicles, as pedestrians, cyclists, or inside surrounding vehicles. These issues require deeper examination and careful resolution to assure safety, reliability and robustness of these highly complex systems for operation on public roads. The presentation will highlight recent research dealing with understanding of activities, behavior, intentions of humans specifically in the context of autonomous driving and transition controls.

Biograpghy: Mohan Trivedi is a Distinguished Professor of Engineering and founding director of the Computer Vision and Robotics Research Laboratory, as well as the Laboratory for Intelligent and Safe Automobiles (LISA) at the University of California San Diego. These labs have played significant roles in the development of human-centered safe autonomous driving, advanced driver assistance systems, vision systems for intelligent transportation, homeland security, assistive technologies and human-robot interaction fields. Trivedi has received the IEEE Intelligent Transportation Systems (ITS) Society's Outstanding Researcher Award and LEAD Institution Award, as well as the Meritorious Service Award of the IEEE Computer Society. He is a Fellow of IEEE, SPIE, and IAPR. He serves very regularly as a consultant to industry and government agencies in the USA and abroad. Trivedi frequently participates on panels dealing with technological, strategic, privacy, and ethical issues surrounding research areas he is involved in.