



Statistical Challenges in Automated Driving Systems

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Abstract:

Machine learning and computational processing have advanced such that automated driving systems (ADS) are no longer a distant reality. However, there exist numerous research challenges to be solved to ensure mass ADS adoption, several of a statistical nature. In this presentation, we outline a subset of these issues with an emphasis on ADS control. We discuss ADS perception systems, request-to-intervene decisions, multi-agent conflicts, and ethical decision making, describing possible solutions to the entailed challenges. Finally, we explore a simulation environment to test our proposed solutions.

Keywords:

Automated Driving Systems, Bayesian Methods, Decision Support, Machine learning; Decision analysis