

Using AI in the Verification and Validation of Automated Driving Systems

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Abstract. Automated vehicles must be carefully verified and validated for their type approval. This is an elaborate and complex task. It includes the analysis of data from the real world and from simulation, recognition of maneuvers in real-world data, detection and evaluation of criticality, construction of scenarios, compilation of scenario catalogs, different kinds of simulations, in particular the exploration of scenario spaces, and assignment of real-world data to scenarios. All of these tasks can be supported by AI techniques. This paper defines the respective problems and shows what role AI could play in their solution.

Keywords: Automated driving systems, verification and validation; AI for verification and validation