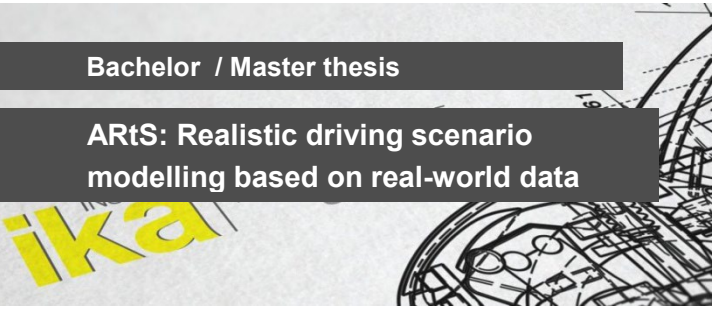
Student thesis



Bachelor / Master thesis

ARtS: Realistic driving scenario modelling based on real-world data

Topic and Goal of the Thesis

Vehicles are increasingly automated. But how can we prove that these vehicles are safe?
This is the key question to assure safety of automated vehicles. To prove safe behaviour, a variety of realistic scenarios are tested. However, the individual trajectories of road users cannot simply be transferred to the simulation, but must be able to interact with the system.

Therefore, an "Advanced Replay to Sim" (ARtS) approach for simulating real traffic data shall be created and evaluated in this thesis. In a second step, the developed method will be tested against a driving function in the simulation.

Working Points

- Literature research on the topics of scenario generation based on real-world data
- Development and extension of a methodology for adaptive generation of traffic scenarios based on real intersection data
- Simulation of the generated scenarios with a simple (self-developed) driving function
- Impact analysis of the driving function on the generated scenarios

Requirements

- Good English or German language skills
- Reliability, commitment and enjoyment of working independently as well as methodically
- Experience with Python

Department

Vehicle intelligence and automated driving

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Language

German or English

Entry Date

Earliest possible date

Prior knowledge

Python