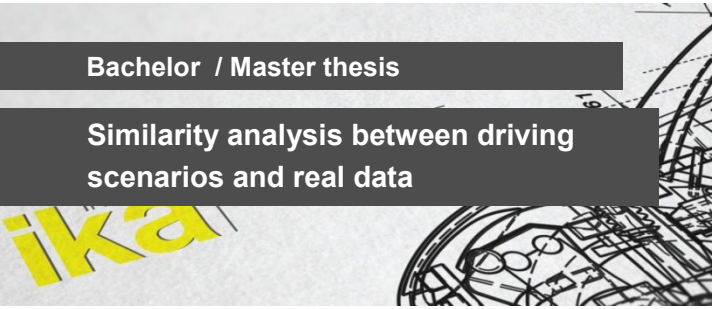
Student thesis



Bachelor / Master thesis

Similarity analysis between driving scenarios and real data

Topic and Goal of the Thesis

After an accident involving an automated vehicle, the developer of the system faces a judge. How can it explain to him that the system was correctly safeguarded despite the accident?
This is a central question for safety assurance of automated vehicles. To prove that the vehicle is safe, a large number of driving scenarios are generated and used for tests of the driving function. However, whether especially synthetically generated scenarios are valid and close to reality remains largely unresolved.

In this work, a methodology shall be developed that allows the comparison of real data and driving scenarios on different levels of abstraction. For this purpose, rule-based approaches as well as machine learning approaches are may be applicable.

Working Points

- Literature research on the topics of evaluation and similarity analysis of scenarios.
- Development of a methodology for evaluating the similarity of driving scenarios and real data
- Exemplary application of the methodology to compare synthetically generated intersection scenarios with drone data
- Validation of the methodology

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