

Student thesis



Project / Bachelor thesis

Generation of synthetic vehicle trajectories based on real-world data

Topic and Goal of the Thesis

Vehicles are driving increasingly automated. But how can we prove that these vehicles are safe?

This is the key question to assure safety of automated vehicles. To answer this within simulations, the individual road users must move realistically. That implies questions like: How do vehicles approach intersections? Are there characteristic locations in scenarios? etc.

In this work, a methodology shall be developed to synthetically generated vehicle trajectories on intersections on the basis of real traffic recordings. In addition, the trajectories are to be modified and subsequently evaluated based on meaningful parameters.

Working Points

- Literature research on the topics of parametrization and generation of vehicle trajectories in scenarios
- Derivation of requirements for the accuracy of vehicle trajectories in scenarios
- Development of a methodology for approximation of real driven trajectories on intersections
- Validations of the generated trajectories and general evaluation of the method

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

Contact



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Language

German or English

Entry Date

Earliest possible date

Prior knowledge

Python