

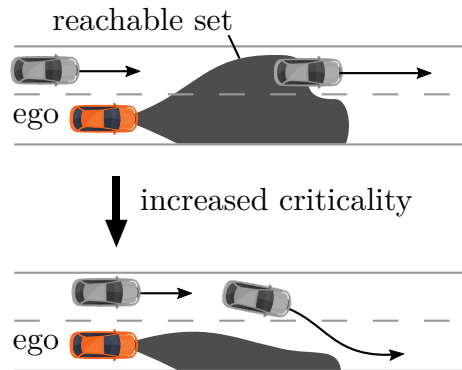
# Generation of Critical Scenarios for Automated Vehicles



Technische Universität München

## Background

For verifying that an automated vehicle is at least as safe as a human driver, one needs to drive more than 400 mio km. This is impossible to cope only by real world testing. Therefore, virtual testing is crucial when developing automated vehicles. Most interesting for those tests are critical scenarios. To automatically generate a large variety of scenarios which push the vehicle controller to its limits, new methods need to be developed.



## Description

Previously an algorithm has been developed, that optimizes given traffic scenarios with respect to their criticality. This method already yields promising results for rather simple scenarios. Your task is to further develop this method to create more complex scenarios or a methods to create a scenario catalog, that fully assesses a motion planner.

If you are interested in **automated vehicles**, **optimization methods** and **motion planning**, this thesis provides a great opportunity.

In case you are interested, please get in contact and we will discuss the topic in more detail.



Fakultät für Informatik

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### Supervisor:

Prof. Dr.-Ing. Matthias Althoff

### Advisor:

Moritz Klischat, M.Sc.

### Research project:

interACT

### Type:

Bachelor's or Master's Thesis

### Research area:

Automated vehicles, optimization

### Programming language:

Python

### Required skills:

Background in optimization or motion planning beneficial

### Language:

english or german

### Date of submission:

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