

4: Implementation and Analysis of a Tool to adjust driving behavior of an autonomous vehicle

The progress in the field of autonomous driving is tremendous. New technologies through the development of artificial intelligence are making this progress possible. Today, the first autonomous vehicles are already driving thousands of kilometers on test routes without the need for major intervention of human drivers.

However, progress also leaves behind ethical questions. How does the vehicle has to behave on public roads? Are there cultural preferences to the driving style? How can the driving style be adapted to the current driving situation?

The aim of the project is to implement a tool to adjust the driving behavior of the planning algorithm. An existing planning module and its environment can be used. The developed tool can then be used to simulate various driving characteristics and its consequences. What does the driving style state about the possible risks of an automated vehicle?

The following points are to be worked on:

- Literature research and familiarization with the topic.
- Identification of the requirements to adapt the driving behavior
- Investigation of suitable methods
- Implementation of the sub-module
- Evaluation and validation of the results
- Comparison to other investigations

You should bring along:

- Creativity
- Independence
- Perseverance
- Good knowledge in programming or willingness to learn (C++/Python etc.)
- Social competence

The thesis should document the individual work steps in a clear form. The candidate undertakes to complete the Master's thesis independently and to indicate the scientific aids used.

The submitted thesis remains the property of the chair as an examination document and may only be made accessible to third parties with the consent of the chair holder.

Start: immediately

End: immediately + 6 months

Chair of Automotive Technology

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