Chair of Automotive Technology
TUM School of Engineering and Design
Technical University of Munich

TUM

Autonomous Driving Project: Development of Perception Algorithms for a Level 5 Research Vehicle

(BA/SA/MA (also Informatics), IDP, FP, …)

Developments in the field of autonomous driving are progressing rapidly. The first autonomous vehicles are already driving thousands of kilometers on test tracks without major intervention by a human driver. Autonomous driving is still a long way from being ready for series production. As one of the biggest megatrends, autonomous driving is being researched with great intensity worldwide. To this end, TUM is working with several departments to develop software for its own road vehicle (Figure 1), which will be equipped with sensors for autonomous driving.

Figure 1: Volkswagen T7 before the conversion for autonomous driving

For this reason, the Chair of Automotive Technology (Prof. Lienkamp) consistently offers exciting research topics in the field of perception. The topics are exclusively software topics. The goal of the work is that the developed software will be used in real vehicles in the long run. Due to the size of the project, there are open topics at any time, which can be used for student research projects of any kind in consultation with the supervisor. We are also happy to receive your own research ideas at any time. Supervision can be flexible and/or in close consultation with the supervisor.

The research work can be started immediately. No presence at the chair is required. All working materials are available.

You should bring:

- Creativity
- High degree of independence
- Endurance
- Basic knowledge in the field of perception (machine learning, computer vison, neural networks, …)
- (Very) good programming skills in Python/C++ or similar
- Social competence

The thesis should document the individual work steps in a clear form. The candidate undertakes to complete the thesis independently and to indicate the scientific aids used by him/her. 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.

Contact:
Sebastian Huch | sebastian.huch@tum.de
Chair of Automotive Technology | Prof. Dr. Markus Lienkamp