University Project Assistant/Universitätsprojektassistent/in
3 years PHD Thesis/3 Jahres-Doktoratsstelle

Systematische Generierung von Verkehrsszenarien für Absicherung automatisierter Fahrfunktioenen
Systematic Generation auf Traffic Scenarios for Test and Validation of Automated Driving

Automated driving will change individual mobility of the future. How this will look like and when it will become available depends on how and when the different challenges can be solved. One of the main challenges is test and validation of automated vehicles to guarantee automated safe driving on public roads. With growing level of automation and increase of applications (highway, rural roads, cities) the amount of traffic scenarios to be tested grows tremendously and will affect the costs for development. The 3-years project is focusing on a systematic approach to generate an reasonable number of test scenarios while maintaining the level of proof.

Contents:

- Literature review on existing approaches
- Selection of data sources and approaches for automated scenario generation
- Algorithm development for automated scenario generation
- Algorithm development for selection of suitable scenarios (corner cases)
- Modelling and simulation of automated driving including vehicle dynamics for microscopic traffic simulation
- Development of automated driving functions for highway use to provide generic test objects
- Automated testing including feedback loops in order to automatically generate scenarios based on failures during testing
- Implementation of the method in virtual simulation and test benches

Needed and recommended qualifications:

- MSc degree (in Mechanical, Electrical Engineering or Informatics)
- Programming skills
- Good basics in control theory
- Excellent German and English skills

Duration: 3 years
Assumed start of work: 1.1.2018
Working place: Institute of Automotive Engineering, TU Graz

Job grading:
According to B1 of the Kollektivvertrag für ArbeitnehmerInnen der Universitäten:
2731 € (14 times a year, including taxes and social insurances)

Until 27.12.2018, applications have to be send electronically to:
arno.eichberger@tugraz.at (Assoc.-Prof. Arno Eichberger)

Application must contain:
Letter of motivation, detailed CV, references, transcript of master degree, publications (if existing)

04.12.2017