

STELLENAUSSCHREIBUNG

Bachelorarbeit, Masterarbeit

DEVELOPMENT OF AN ONTOLOGY AND COMPILATION OF A SCENE CATALOG OF CORNER CASES FOR AUTONOMOUS VEHICLES

UMFELD

Autonomous driving has made huge advances in the last couple of years. However one of the biggest challenge is the scale-up of existing systems from small, well-defined operational design domains (ODD) to a much broader domain. The core challenge for the systems here is to handle all the rare corner cases which occur on the road. To quote Andrej Karpathy, Director of Artificial Intelligence at Tesla: "It's all about the long tail - 99.9999...%"

To tackle this challenge, at FZI we are working on a better understanding of rare corner cases. With a deep understanding of corner cases, autonomous vehicles can be enabled to better detect and handle those. We are seeking candidates with a strong interest in performing cutting edge research in a very active and exciting area.

AUFGABEN

- Literature research and evaluation of the state of the art
- Creation of a rare event database from public data
- Development of an ontology for the description of corner cases to enable clustering and dependency analysis
- Compilation of a scene catalog based on the ontology, partly including data examples
- Evaluation of different sensors with respect to their suitability for identification corner cases (master thesis only)
- Recreation of selected corner cases in the simulation engine CARLA (master thesis only)

WIR BIETEN

- Interdisciplinary working environment with partners from science, industry and society
- Insights into cutting-edge research
- Fully remote (for now)
- A pleasant working atmosphere
- Constructive teamwork
- In case of outstanding work, publication of data set and an associated paper

WIR ERWARTEN

- Interest in the topic of autonomous vehicles
- Basic knowledge about perception in autonomous vehicles
- First experiences with Python
- Self-reliant thinking and working
- Motivation and commitment
- Fluent in English or German

BEWERBUNG

We are looking forward to receiving your PDF application. Please send your application containing the following documents to Daniel Bogdoll, bogdoll@fzi.de

- Two sentences why you are interested into the thesis
- Current transcript of records
- Curriculum vitae in tabular form
- Themen-Schwerpunkt: Maschinelles Lernen, Mobilität, Sichere und intelligente Fahrzeuge
- Studiengänge: Informatik, Informationstechnik, Informationswirtschaft, Verwandte Studiengänge