

Detecting Localization Failure using Deep Learning Methods for Autonomous Driving



Bachelor / Master Thesis The scope of the thesis can be adapted individually.

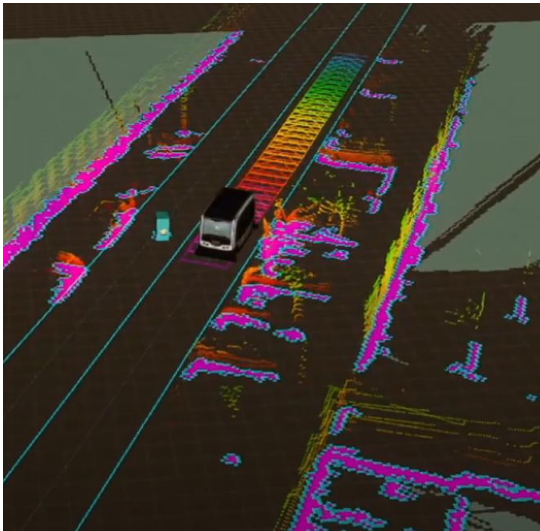
Autonomous Driving

Machine Learning

Deep Learning

Safety

Autonomous vehicles rely on robust perception and localization components. In case of a failure in the localization component, the vehicle might not be able to perform the desired behavior. This is a serious problem in autonomous driving, since components work with noisy data. Therefore, it is important to detect failures in these components and react accordingly.



The Topic

- You will perform state-of-the-art research on failure detection methods for localization in autonomous driving
 - Based on the results, you will evaluate the performance of different methods and propose improvements
 - You will evaluate the performance of the prototype in simulation and on real-world data or directly on our shuttle busses
- Exciting insights into our research and valuable practical experience
 - Latest hardware and software for your work
 - Regular support and feedback
 - We plan on publishing these results in IEEE journals and with shared first-authorship

Your Skills

- You study Computer Science or a related field
 - You are interested in machine learning and deep learning, as well as autonomous driving
 - You are not intimidated by scientific papers
 - You have experience in Python, PyTorch and Linux
 - You show an above-average level of initiative and responsibility
- Start: Immediately
 - Write me an email at schotschneider@fzi.de with your CV and a few sentences why you are interested and why you are a good fit
 - After acceptance, we will set up a first meeting to discuss the details and to form the topic to your needs.

What We Offer

How To Apply