



Virtual Vehicle is a leading international R&D center for the automotive and rail industries. The center focuses on advanced virtualization of vehicle development. About 300 people are employed at the site in Graz - their expertise enables the efficient development of affordable, safe and environmentally friendly vehicles.

Master Thesis

“Lidar-based lane detection and in-lane localization”

Ref.Nr. E_137

Master Thesis

Lane detection and in-lane localization based on camera has been recently heavily investigated and commercialized (e.g. MobilEye), but in some scenarios it has bad performance, e.g. in darkness or under sudden lighting changes. The lane detection based on lidar presents an alternative for autonomous vehicles and can be a reliable backup sensor source for safety and redundancy. VISTA is a data-driven, photorealistic simulator for autonomous driving, which takes real data of the physical world as input. It will be the simulation environment for algorithm development and testing for lidar-based lane detection implementation. As part of a dynamic and international team and within the scope of an international research project, you will help with the development of a lidar-based lane detection and in-lane localization pipeline in simulator at the first step, deploy the approach on the autonomous driving demonstrator, benchmark the proposed solution against the camera-based lane detection, and finally will have chance to contribute to dissemination of the implementation results.

Your Tasks

- Understand the operation principle of lidar sensor and point cloud data.
- Create a simulation environment utilizing the VISTA simulator.
- Establish a learning framework for lane-detection based on raw point cloud data.
- Test and compare the proposed pipeline with camera-based approach.
- Report as dissertation and assist in publication of the results.

What we Offer

- Collaboration and contribution in an engaged, dynamic team.
- Interesting work in an international research center with a diverse multi-national team.
- **Paid Thesis and Student Worker** possibility.
- Mentoring program for new employees.
- Corporate Events.

For technical questions please contact:

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Your Profile

- Experience in processing sensor data.
- Experience in Computer Vision.
- Experience in Machine Learning.
- Programming skills (Python, C++ etc.).
- Fluent in English.

APPLY NOW and JOIN OUR TEAM

Your Contact:

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