



## Master Thesis

Release date: 10.11.2023

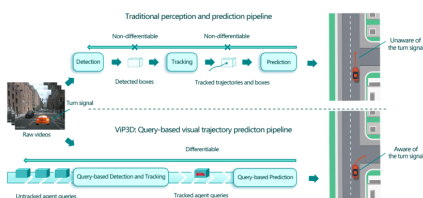


Figure 1: Query-based prediction using multiview images (Gu et al.: ViP3D: End-to-end Visual Trajectory Prediction via 3D Agent Queries, 2023).

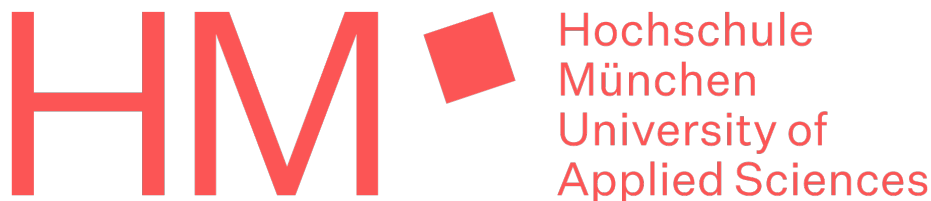
## Contact

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## End-to-End Trajectory Prediction using Camera and LiDAR

### Description

- The Intelligent Vehicles (IV)-Lab is looking for a Master student to support research in the field of autonomous driving.
- Predicting the motion of other traffic participants is a crucial task for autonomous vehicles. Most approaches utilize parsed 2D positions of other agents. However, recent approaches have started to utilize raw sensor data for this task. For this thesis, we want to examine the effects of using camera and LiDAR data jointly in a single end-to-end model for trajectory prediction.

### Your Project

- Review current methods on trajectory prediction with a focus on end-to-end approaches and state-of-the-art fusion methods.
- Design a model that uses camera and LiDAR data to directly detect objects and predict their trajectories. You can start with the method by Gu et al. as a baseline.
- Examine the effects of adding LiDAR data through extensive ablation studies to answer the question if prediction models need hand-selected features or not.

### Your Profile

- Enrolled at Munich University of Applied Sciences
- Willingness to learn and interest in the topic of autonomous driving
- Ability to work independently, conscientiously, and accurately
- Previous experience with Python is required

### What we offer

- Access to high-end GPU cluster for training
- Access to workstation with GPU for development
- Supervision and close cooperation with PhD candidate
- Depending on your results: possibility to publish your work at a conference

Does this appeal to you? Then reach out to us via mail and send a short introduction, your current grade report, and a CV with a photo.