

Bachelor Thesis

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Figure 1: Example image nuScenes. [Motional]



Figure 2: Example image Waymo Open. [Waymo]

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Rel. Resources

Related Reference: Ettinger et al. Large Scale Interactive Motion Forecasting for Autonomous Driving: The Waymo Open Motion Dataset, 2021

Related Reference: Caesar et al. nuScenes: A Multimodal Dataset for Autonomous Driving, 2020

A Study on Domain Gaps in Autonomous Driving Datasets

Description

- The Intelligent Vehicles (IV)-Lab is looking for a **Bachelor student** to support research in the field of autonomous driving.
- Further information you find here: iv.ee.hm.edu

Your Project

- There are many large scale autonomous driving datasets that are used for trajectory prediction. The recordings are done in different countries, cities, and weather conditions which influence the way traffic participants behave (see Figures 1 and 2).
- For this thesis, it is your task to investigate the influence of domain gaps on the performance of trajectory prediction models.
- You will first analyze the datasets and research possible trajectory prediction models.
- Then you will setup an experiment plan to evaluate the presence and the influence of domain gaps between these datasets. For this, you will perform multiple trainings on different datasets or combinations of different datasets and analyze the results of the trained models.
- The goal of this thesis is to make an empirical statement about domain gaps in trajectory prediction datasets and to give recommendations on how to deal with them.

Your Profile

- Willingness to learn and interest in the topic of autonomous driving
- Ability to work independently, conscientiously, and accurately
- Previous experience with Python is required
- Previous experiences with Linux, Bash, and git are a plus

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

Does this appeal to you? Are you interested in the field of autonomous driving? Then reach out to us via mail and send a short introduction, your current grade report, and a cv with a photo.