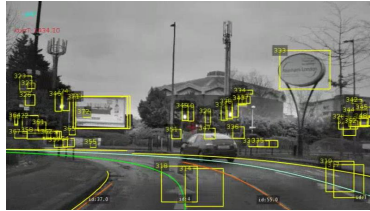
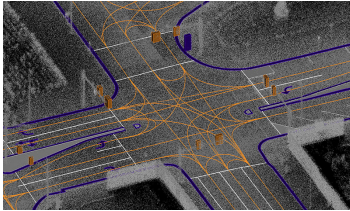


Bachelor- / Master thesis

Online traffic sign and intersection estimation



Left: State-of-the-art planning map (Carmera), Right: Mobileye's Roadbook (CES Slides)

High-definition maps (*left image*) are essential for autonomous driving with today's perception capabilities. However, maps degrade over time and are an auxiliary tool that introduces a whole new set of problems. Therefore, driving without HD maps is preferable. The exact road topologies and traffic rules must now be inferred from sensor information. Traffic signs and road markings are helpful indicators for this and must now be detected and evaluated.

The proposed thesis approaches this by using available detections and attempting to track, classify and filter them to create the necessary input to infer difficult traffic scenarios. It consists of the following parts:

- + Literature research on traffic sign recognition and mapping
- + Integrating odometry for local pose estimation
- + Tracking and filtering
- + Mapping and verification

I'm happy to answer any questions you might have. Feel free to make an appointment or ask at my office!

Institute of Measurement and Control Systems (MRT)
Prof. Dr.-Ing. Christoph Stiller

Advisor:

Johannes Janosovits, M.Sc.

Programming language(s)¹:

C++ proficient
Python / advanced
MATLAB

System, Framework(s):

Linux, ROS

Required skills:

Work on your own

Language(s):

German, English

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Or directly send in your application including your current grades as well as our questionnaire!



¹ **skill levels:**

beginner < 500 lines of code (LOC)

advanced 500 – 5000 LOC

proficient > 5000 LOC