Student Thesis

Bachelor Thesis

Image-Based Localization of Drones

Topic and Goals of the Thesis

For the development and safety validation of automated vehicles, huge trajectory datasets of road users are necessary. One solution to create those datasets is the use of drone imagery of traffic on e.g. highways or urban intersections.

For this purpose, not only all the road users must be extracted from the recordings, but also the position of the drone must be determined with high accuracy. While this is easy with a statically hovering drone, the challenge of localization lies in the dynamic flight along a considered route. Within this thesis an approach for simultaneous (or sequential) mapping and localization of a drone using video recordings must be developed and evaluated.

Tasks

- Literature research on state-of-the-art SLAM algorithms
- Implementation of one or more solutions on existing video footage
- Evaluation of the implementations regarding positioning accuracy and processing time

Your Profile

- Good English and/or German language skills
- Reliability, commitment and enjoyment of working independently
- Basic computer vision experience
- Advanced programming experience in Python and/or Matlab

Department

Vehicle Intelligence & Automated Driving

Contact

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Entry Date

ASAP

Prior Knowledge

Programming
Basic Computer Vision