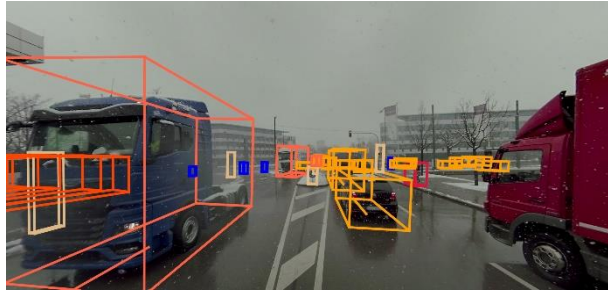# Benchmarking Long-Range Object Tracking Algorithms for Autonomous Trucking Applications

Autonomous trucking depends on an accurate representation and understanding of the environment. This perception task does not only consist of object detection and localization but also tracking and prediction. However, to this date, the transferability of tracking algorithms for autonomous passenger cars to the autonomous trucking domain has not yet been shown. Therefore, state-of-the-art tracking algorithms should be implemented and benchmarked in autonomous trucking applications.

This Thesis offers a unique opportunity to implement state-of-the-art tracking algorithms and evaluate them on newly released autonomous trucking data for the first time. It aims to establish an object tracking benchmark for autonomous trucking applications and evaluate the transferability of tracking methods for autonomous passenger cars. The goal is to develop an objective, reliable, and valid object tracking benchmark for autonomous trucking and test it with state-of-the-art algorithms on real-world data.

The first step of this project consists of literature research on the current state of the art in object tracking and benchmarking. Afterwards, an object tracking benchmark should be designed that meets the quality criteria of empirical research before different tracking algorithms should be implemented and tested in a third step. Finally, the results of the work should be compared to established benchmarks to derive future directives.

Work packages

- Literature research on object tracking and benchmarking
- Design of a holistic object tracking benchmark
- Implementation of state-of-the-art tracking algorithms
- Evaluation of their suitability for autonomous trucking applications
- Comparison of the results and deduction of future directives

Requirements

- Enthusiastic about autonomous driving
- Excited about Python programming
- Involved working attitude

The thesis can be written in German or English language. Should you be interested in this project or any other project in the context of autonomous driving, send a CV and transcript of records to:

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