Autonomous Racing –
Framework for a Dataset for Object Detection

In the context of the project Roborace, software for an autonomous racing vehicle is developed at the Chair of Auto-motive Technology. This software manages the whole process of autonomous driving: Starting at data acquisition by the sensors, perception, planning and finally controlling the vehicle safely under racing conditions.

Modern vehicles sensors offer a wide range for environment perception such as Cameras, LIDAR and Radar sensors. To facilitate object detection with machine learning methods, we want to create a dataset with camera, radar and LIDAR data. The design of this dataset is to be determined in this IDP and to be realized in its first version.

In a first step, the current state-of-the-art of dataset creation is to be evaluated. In a second step, the scenario definition for the dataset is to be determined. Besides data recording, a strategy for (semi-)automatic labelling is to be developed. The Labeling itself is then conducted with further partners. In the IDP, you will develop an API for the dataset, so it can be used in further public research.

Work packages
- Literature search about dataset creation and labelling
- Generate scenario definition
- Develop a strategy for (semi-)automatic labelling
- Development of an API to access the dataset

Requirements
- Practical knowledge in data handling
- Practical knowledge in perception topics
- Ideally programming experience in Python
- Involved working attitude

Should you be interested in this project or in another project in the context of the Roborace project, send a short motivation letter, transcript and CV to:

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