Lehrstuhl für Fahrzeugtechnik
TUM School of Engineering and Design
Technische Universität München

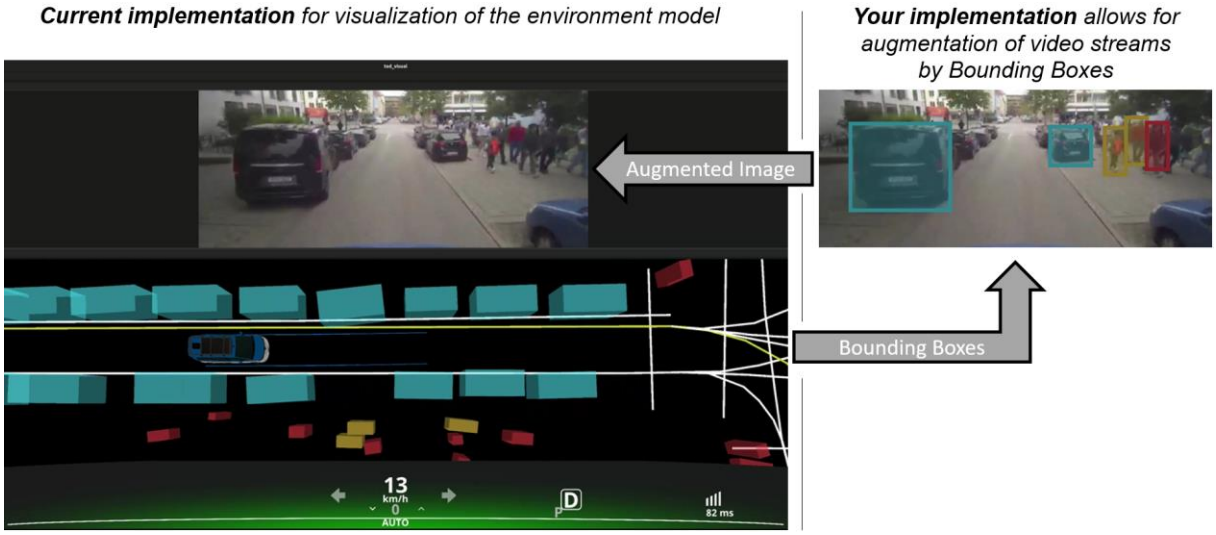
IDP

Show me what you see: Augmented reality methods for the video streams of automated vehicles

Are you interested in automated vehicles and would like to contribute to their further development? Then the following project might be interesting to you.

The figure below shows the **environment model** of the automated research vehicle **EDGAR**, which is being developed at the Chair of Automotive Technology. The environment model includes **bounding boxes**, which represent the contour of recognised objects in the vehicle's environment (depicted by differently coloured boxes in the lower left part of the figure). As part of your work, you will develop and evaluate an approach to **augment the vehicle's camera streams with the bounding boxes**. This involves projecting the boxes from the environment model into the video image. This allows us to better evaluate the perception of the vehicle's surroundings.

As part of your project, you will have the opportunity to work with the EDGAR test vehicle from the Chair of Automotive Technology. You will work with the programming language C++ in the middleware ROS2 and in an existing software stack for displaying the environment model.



Current implementation and goal of your implementation for video stream augmentation

Task description: Your project is divided into the following work packages:

- Literature research on existing techniques for video augmentation
- Familiarisation with an existing software stack and identification of visualisation requirements
- Development of real-time-capable visualisation techniques that meet the identified requirements
- Integration of the methods into the existing software stack
- Evaluation and discussion of the results

Ideally, you already have experience in the field of autonomous driving and the programming language C++ as well as the middleware ROS2.

This IDP can be completed in German or English. I look forward to receiving your application with a current transcript of records and CV to the following e-mail address:

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