

Forschungspraxis

# Multimodal Object Detection with Introspective Experts

Object detection can be performed with different sensor modalities, such as camera images, LIDAR point clouds or a fusion thereof. Adverse weather conditions such as rain or fog can cause different failure cases for different sensor types. In this work, an approach for finding the best suited models for different conditions is investigated. In training, each sensor configuration (camera, LIDAR or fusion) is trained separately. Then, the models are finetuned using only the training images they performed well on, leading to a set of expert models designed to work best with a subset of the training images. Finally, a selection model needs to be designed that is trained to select which expert model is most suitable for the current scene. The models can be trained and evaluated in the CARLA simulator, where different weather conditions can be easily generated.

## Prerequisites

Knowledge of Deep Learning and Linux

## Advisors

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