Chair of Media Technology
TUM Department of Electrical and Computer Engineering
Technical University of Munich

Master's Thesis

Introspective Sensor Monitoring for Multimodal Object Detection

In multimodal object detection, different sensors such as cameras or LIDAR have different strengths that are combined for optimal detection rates. However, different sensors also have different weaknesses. In this thesis, a monitoring model for each individual sensor is trained with previous performances of that sensor. For a new input, the sensor's performance is then predicted based only on the sensory input. The predicted performance score is then used in the subsequent sensor fusion to reduce the impact of challenging sensory readings, allowing the fusion architecture to dynamically adapt and rely more on the other sensors instead.

Prerequisites

Experience with Machine Learning and Object Detection

Advisors

Christopher Kuhn