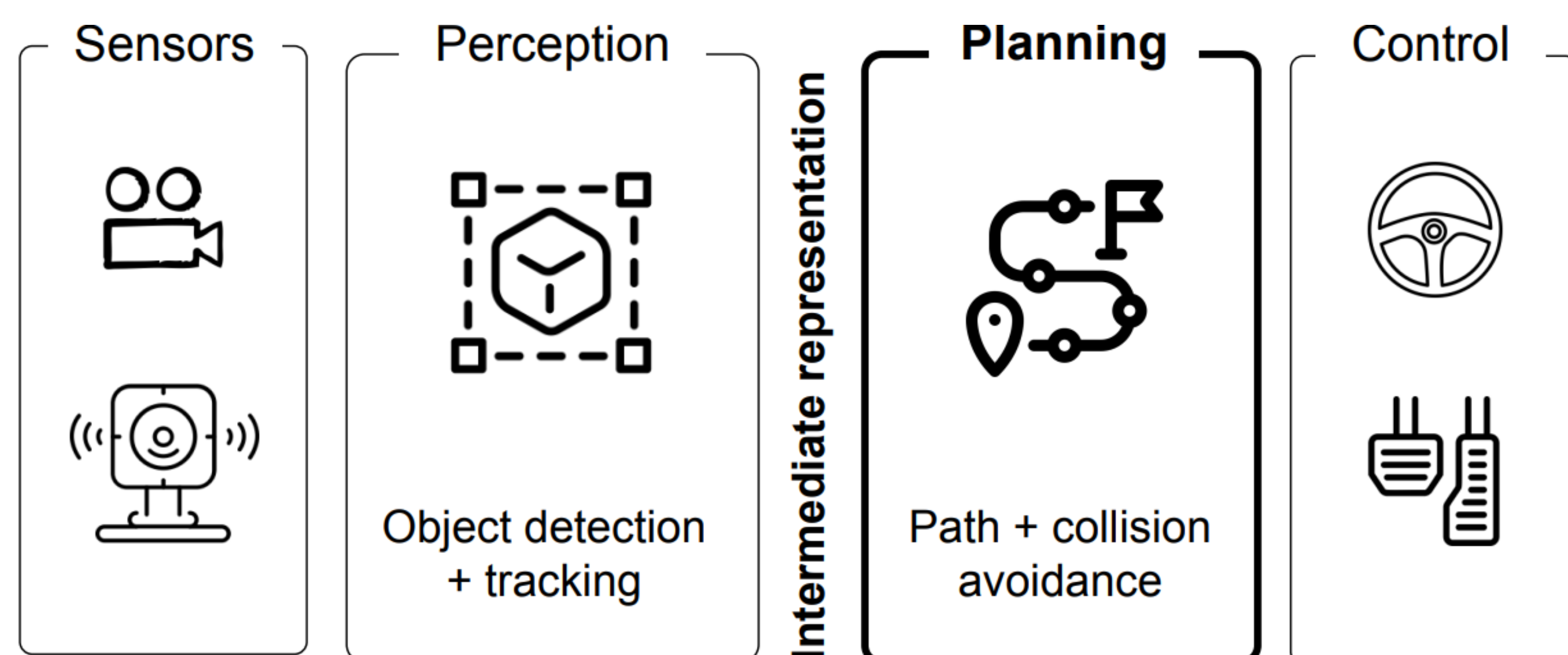


On Offline Evaluation of Detection for Autonomous Driving

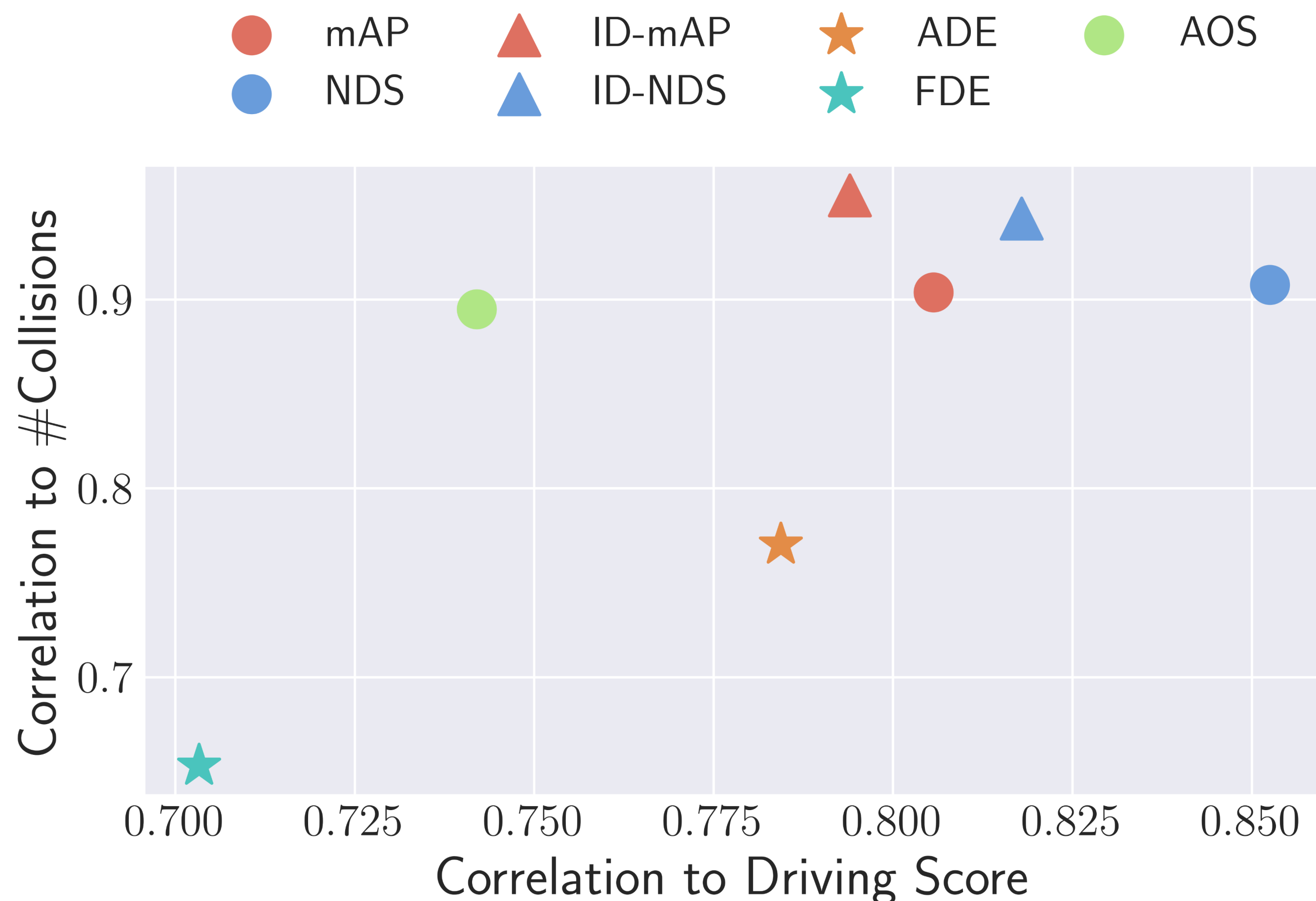


Tim Schreier, Katrin Renz, Andreas Geiger, and Kashyap Chitta
University of Tübingen, Tübingen AI Center

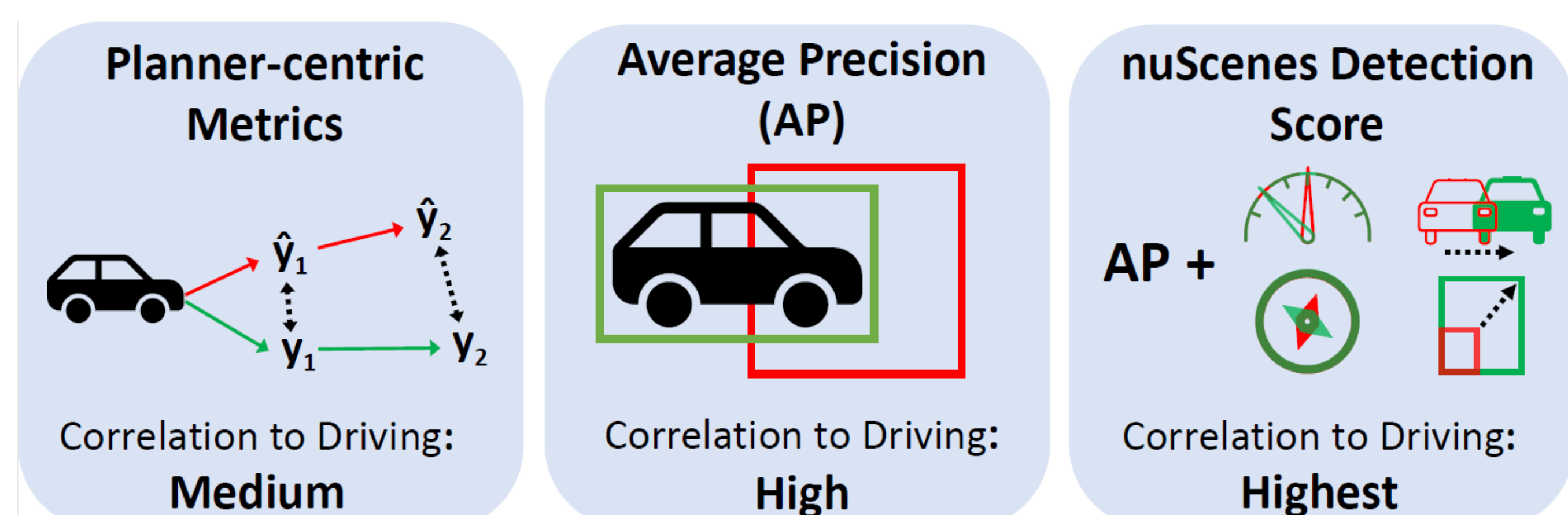
We evaluate 16 3D object detectors within a closed-loop driving system using the CARLA simulator...



...and measure several recent detection metrics to find their correlation to downstream driving metrics.



The nuScenes Detection Score (NDS) is a weighted average of the velocity, translation, orientation and scale errors along with the standard mean Average Precision (mAP).



We recommend the NDS for offline evaluation!

#1. First empirical evaluation of detection metrics

#2. nuScenes Detection Score most predictive of driving performance

#3. Average Precision more predictive than planner-centric displacement errors