

## Abstract

Development of Intelligent transportation systems has been an area of major focus in recent years. A huge amount of research is done to enhance the perception of autonomous cars in order to reach a higher level of autonomy. With the development of vehicular communications, cooperative perception by sharing low-level data has become a viable approach to make improvements. In this work, cooperative object detection with point clouds is studied in depth. A framework based on the CARLA simulator [1] is designed for fully simulated experiments, including scenario construction, data generation, deep learning model training, and evaluation. The novel composition of the training data produces a more generalized model. A fusion scheme that balances communication cost and performance is proposed. The testing results are evaluated and analyzed to learn the factors that decide the benefits of raw data sharing.