Instruction to run the code

The required library has to be installed:

1. Python 3.7
2. OpenCV 4.5.4
3. Numpy 1.21.5
4. easyOCR 1.5.0 (optional)
5. clipspy 1.0.0 (optional)

Driving:

The EdgeServerExpertSystem.py is the main driving pipeline in the remote server. This pipeline contains an expert system and an OCR system. The expert and OCR system can be disabled. This pipeline is developed for future research thus included in the file. The clipspy_car.py and constructs_car.clp contains the expert system pipeline and rules used by the EdgeServerExpertSystem.py . Once the EdgeServerExpertSystem.py starts, it prints the used IP address and port. The IP address and port used in the edge-server are needed by the client program of the AMVDriving.py file to communicate. The AMVDriving.py files control the vehicle.

Evaluation:

In order to evaluate the communication and streaming latency, ClientBenchmark100Byte and ClientBenchmarkStreaming files are used. First, server_benchmark_100Byte and ClientBenchmarkStreaming files must be running in the edge-server. Then the IP address needs to be placed in the client program. The details evaluation metric is described in the thesis report.

The model folder contains the steering prediction model and the traffic-sign detection model. They have to be imported into EdgeServerExpertSystem.py before starting the edge-server program.