Image Capture and Processing for Traffic Density Analysis

The goal was to determine the traffic density on a sample of road and log the data in a database.

The input source for this application was a live video feed. The camera used was a IP Hike Vision camera. The processing of the camera feed was done on a Raspberry Pi3.

The code for the image capturing and processing was written in Python 3. OpenCV library was used to process the images. SQLite DB was used to store the values. The camera feed was read as a rstp feed.

Steps in processing:

- The live feed is taken from an IP camera within the same local network as a rstp feed.
- A snapshot of the video is taken at a pre-determined time interval. Processing is performed on this image.
- The total duration of running and time interval must be determined beforehand.
- The frames that are captured are processed using multiple functions in the OpenCV library
- The functions help to clean the image and detect the edges.
- Capacity/Density is calculated based on a predetermined mask area
- The density value is stored in a SQLite Db on the raspberry pi.