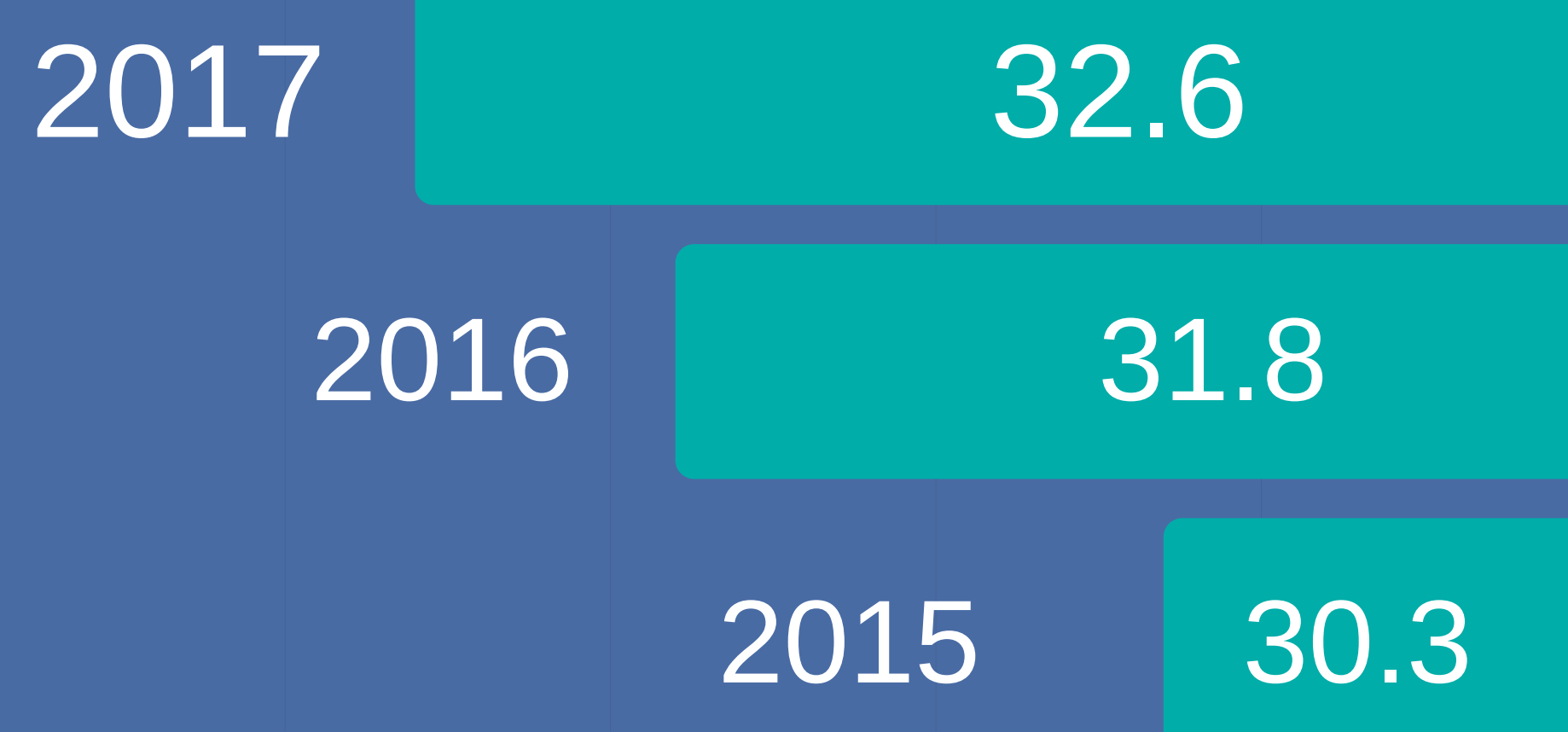


1

PROBLEM STATEMENT



- The fatalities of road accidents in Mexico went from 30.3 cases per day in 2015, to 31.8 in 2016 and in 2017 it reached 32.6 cases.



Better routes and less traffic

2

OBJECTIVES

GENERAL OBJECTIVE:

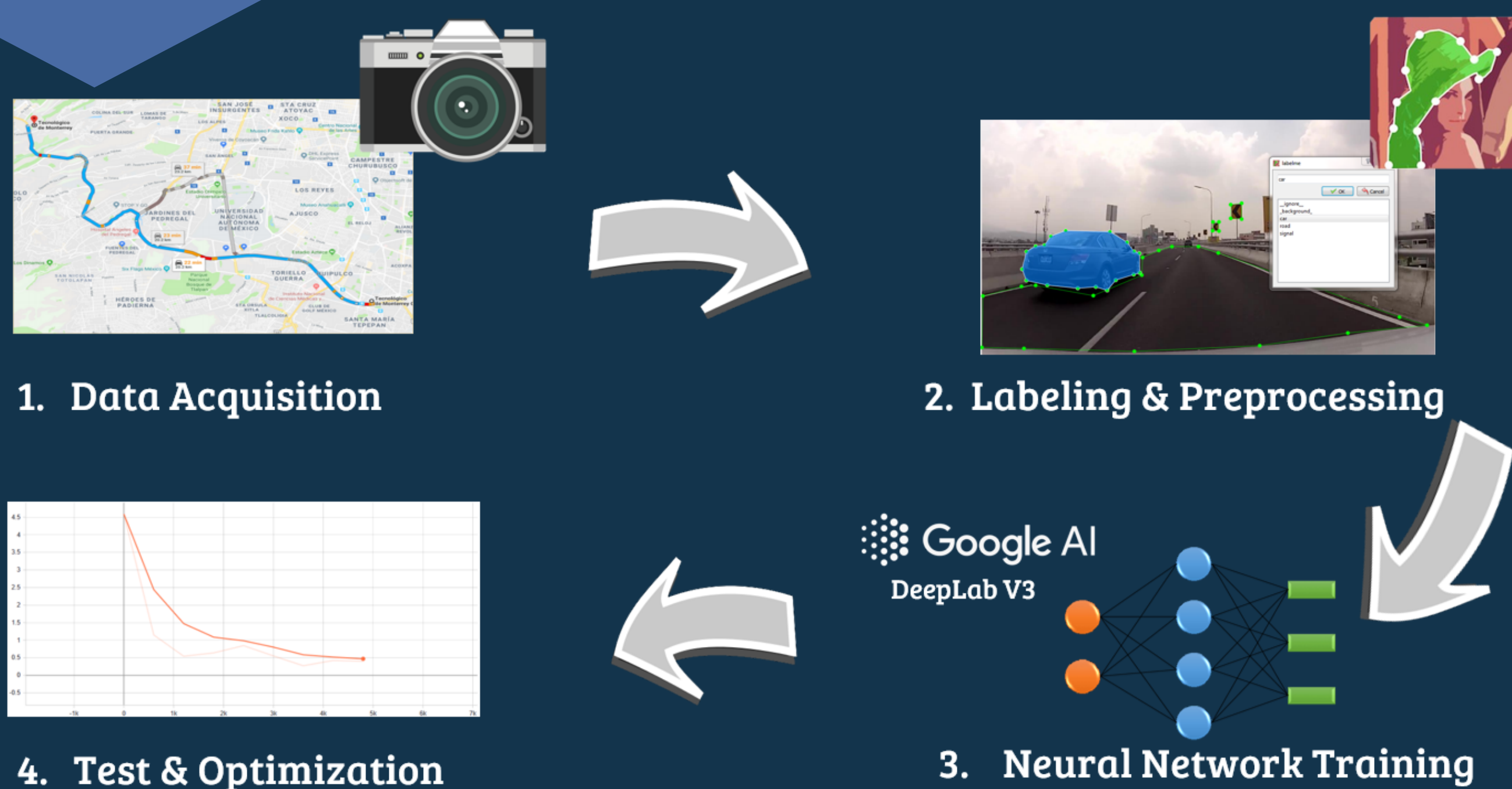
Use neural networks for computer vision in order to segmentate cars, lanes and signs on a mexican highway.

SPECIFIC OBJECTIVES:

- Generate own dataset
- Label 3 objects for training
- Train a Neural Network with own dataset in order to do semantic segmentation of interest objects

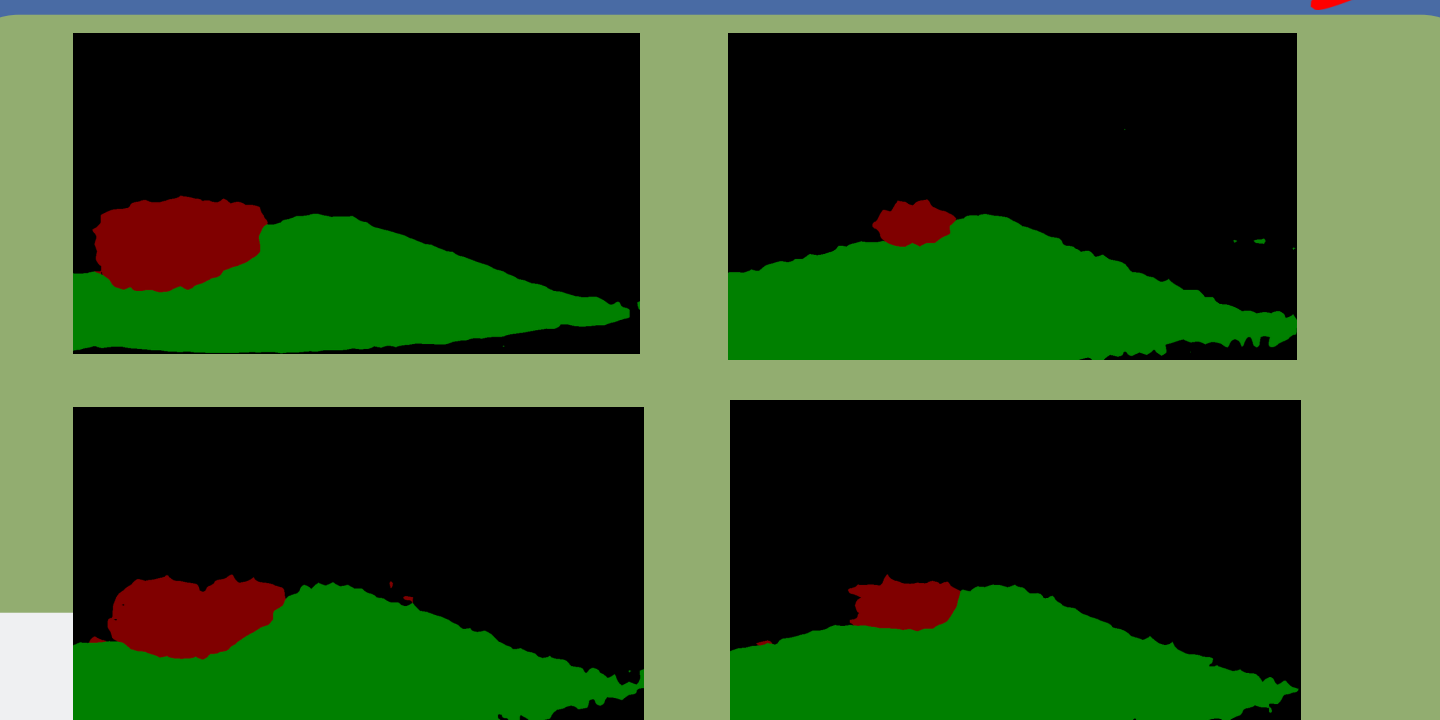
3

DEVELOPMENT



4

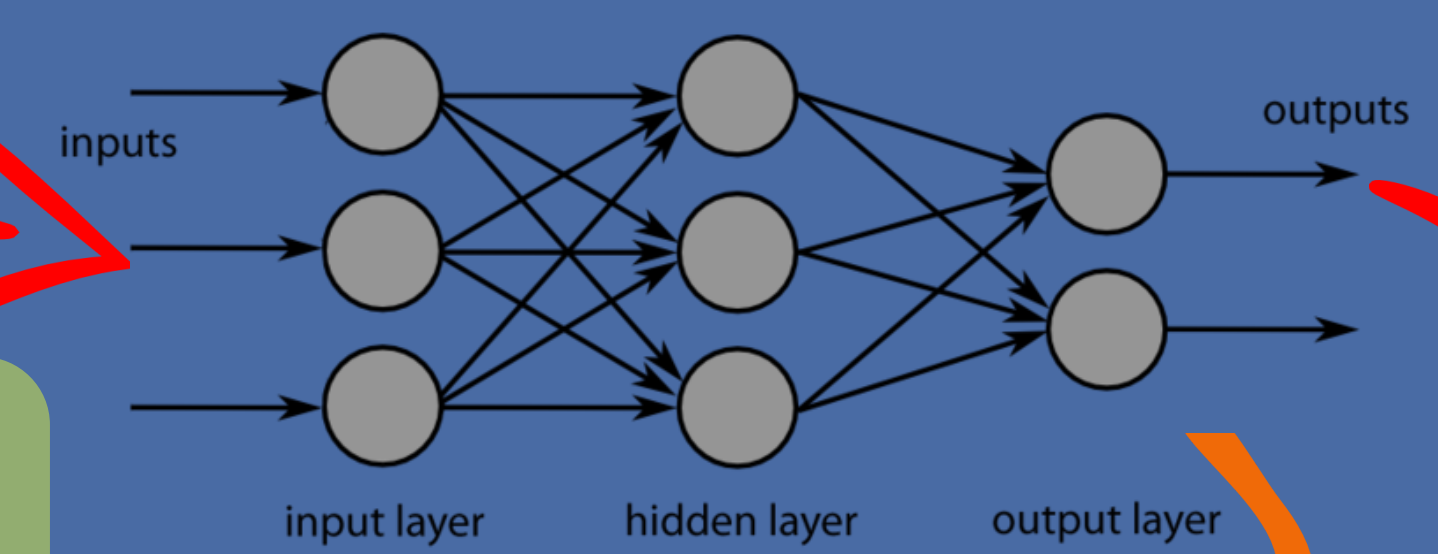
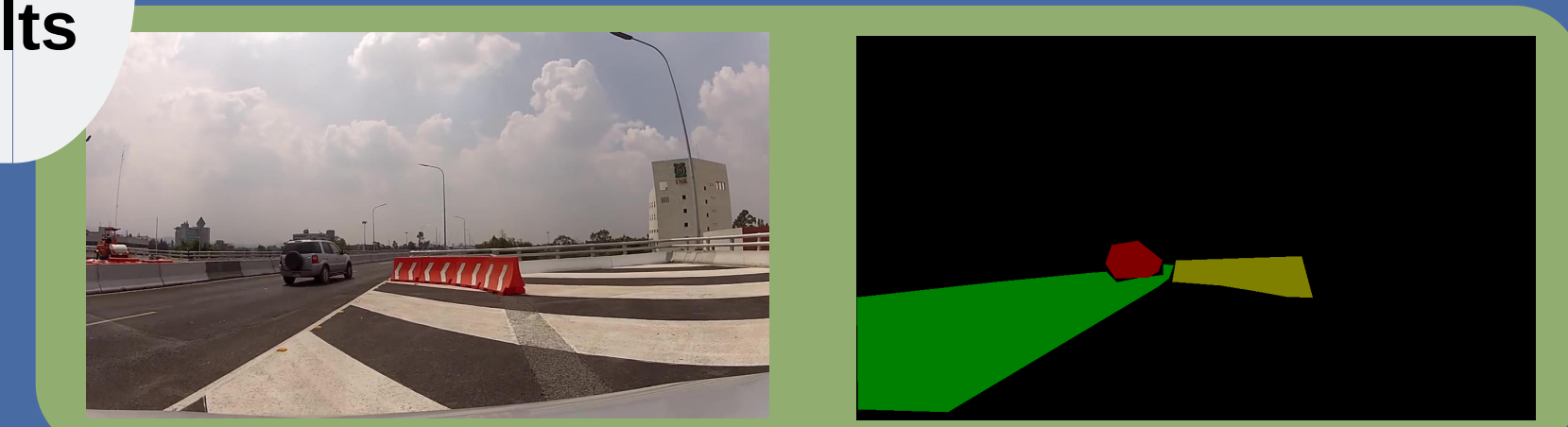
IoU = 0.9257



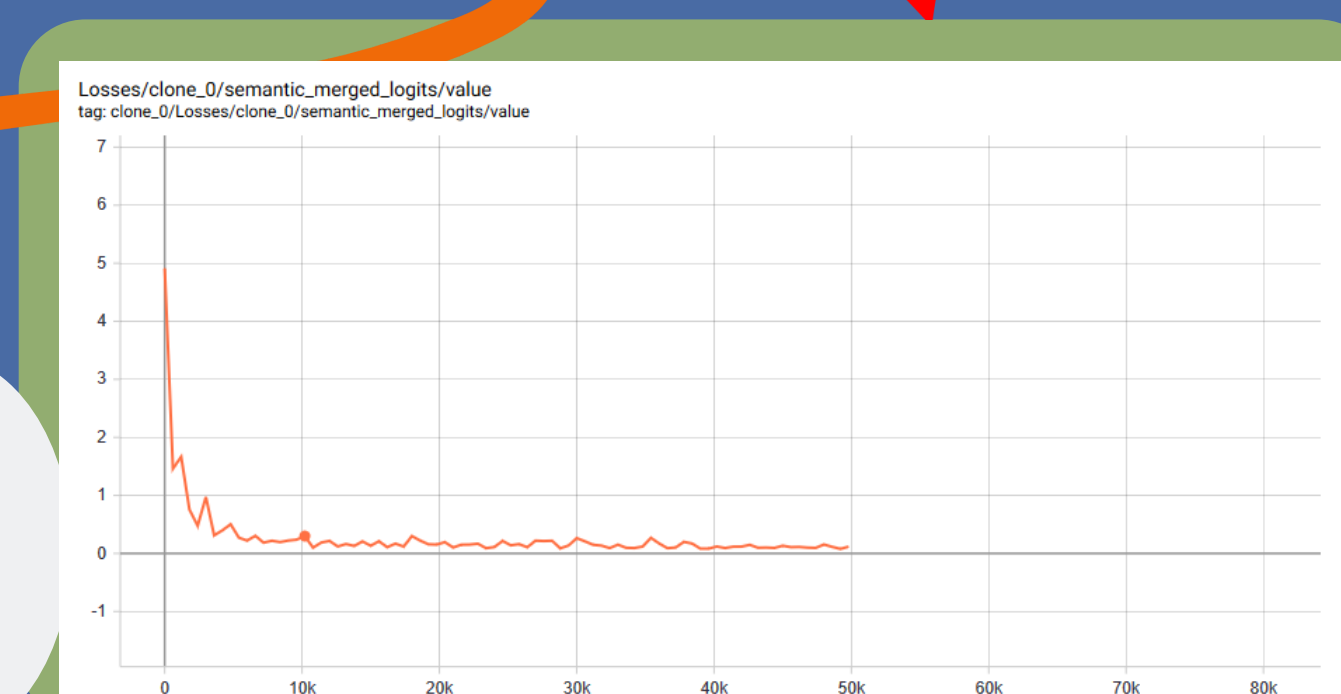
Training Results

RESULTS

Dataset results



Loss Graph



5

CONCLUSION

A good semantic segmentation was achieved on images of a Mexican highway.

The networks' parameters were succesfully optimized for our database.

An improvement of 20% IoU was achieved over last semester's work.

0.9257 VS 0.7168

6

FUTURE WORKS

- Increase database
- Improve processing capacity
- Training on more labels
- Evaluate model with real- time tests
- Control actuators