Deep Learning for Autonomous Vehicles

Subproject 2 – Module 2

Vehicle Detection in the Wild using the NEXET Dataset

NEXAR CHALLENGE II

https://www.getnexar.com/challenge-2/#

Follow the instruction of the challenge for testing and model evaluation. You are free to submit your result to Nexar if the challenge still is open.

The robustness of learning end-to-end driving policy models depends on having access to the largest possible training dataset exposing the true diversity of the 10 trillion miles that humans globally. Current approaches are limited to models trained using homogenous data from a small number of vehicles running in controlled environments or in simulation, which fail to perform adequately in real-world dangerous corner cases. Safe driving requires continuously resolving a long tail of those corner cases. The only possible way to learn a robust driving policy model is therefore to continuously capture as many of these cases as possible.

In this project, your task is to build a rear vehicle detector function that computes bounding boxes around each clearly visible vehicle on front. The detector should be looking for vehicle(s) in front of the camera which are also driving in the same direction. The purpose of this task is to improve the Forward Vehicle Collision Warning feature, which requires a very accurate bounding box around the rear side of the vehicle(s) ahead.

After login using your github account you will have access to the dataset.

Your solution should be at least 75% accurate

DOWNLOAD RESULT CSV

BOUNDING BOXES (CSV)

DOWNLOAD FULL DS (9,9GB)

DOWNLOAD PART 1 (3,3GB)

DOWNLOAD PART 2 (3,3GB)

DOWNLOAD PART 3 (3,3GB)