CAR LICENSE PLATE DETECTION SYSTEM FOR PARKING LOT

Thi Van Nguyen

1. Introduction

FRONT GATE

Michael Andrews

Licence plate
PARK38

Session started
Today, 9:00am

How

using some sensors to determine the car
has been stopped in the appropriate place
before capturing image, and then detect
plate on predefined area.

GOAL

how to recognize quickly the vehicles that will
go into the parking lot and how to recognize
various types of license plates in various light
conditions quickly . It will help you reducing
operating expenses and keeping your clients
satisfied

2 steps to recognize and read automatically the vehicle license
- ***identify the area (region) from the license plate itself***
- *read the letters and numbers from license plates of vehicles*

Dataset

Dataset from Kaggle to collect the vehicle images
- This dataset contains 433 images with bounding box annotations of the car license plates within the image.
- Annotations are provided in the PASCAL VOC format

2. Method

- Using pre-train VGG16 and RESNET50 on the license plate dataset. This means reusing the weights in one or more layers from the pre-trained network models in a new model and keeping the weights fixed.

- Adding news layer and fine tuning them on car license plate dataset
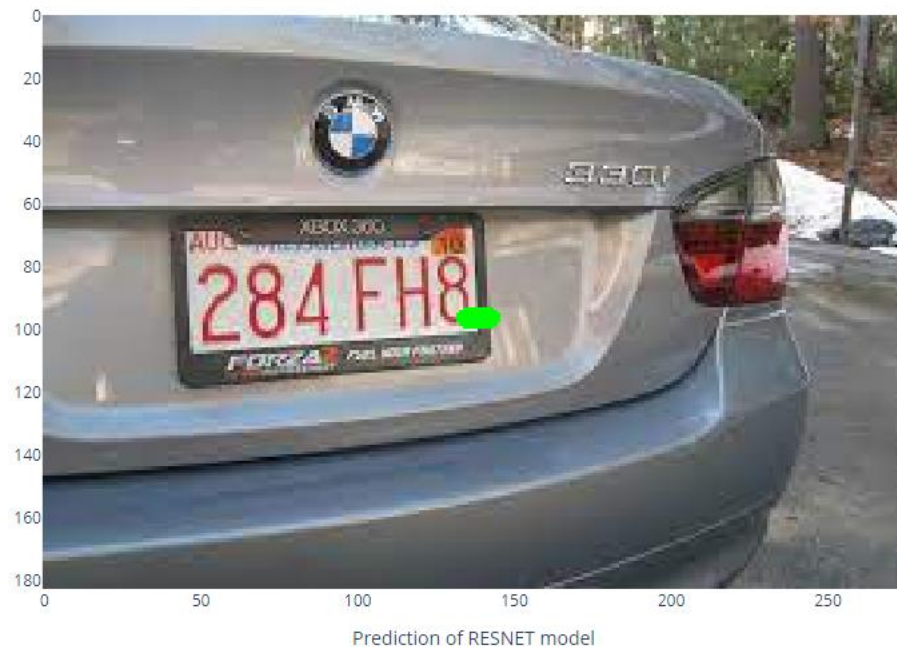
Example

Figure 1 - Car1.jpeg with bounding box

3. Result

VGG16 model

RESNET50 model

4. Conclusion

The system has successfully implemented with various kind of license plates

The model still needs further research such as how to tune the hyperparameters to improve the accuracy

Thank you & Q&A