

Vehicle Detection and Classification from Images

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The background is a solid dark blue. In the top-left corner, there are several light blue bokeh circles of varying sizes. In the top-right corner, there are white numbers (3, 7, 5, 0, 9) and a network of thin white lines connecting dots. In the bottom-right corner, there are more light blue bokeh circles. In the bottom-left corner, there is a faint network of thin white lines connecting dots.

01

Introduction

Reminder of Our Project Goals

The background is a solid dark blue. In the top-left corner, there are several light blue bokeh circles of varying sizes. In the top-right corner, there is a network of thin white lines connecting small dots, with large white numbers 3, 7, 5, 0, and 9 scattered around it. In the bottom-right corner, there is a cluster of light blue bokeh circles. In the bottom-left corner, there is a faint network of thin white lines connecting dots.

02

Detection

Progress in the Detection Task

Detection

5

6

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The background is a solid dark blue. In the top-left corner, there are several light blue bokeh circles of varying sizes. In the top-right corner, there are white numbers (3, 7, 5, 0, 9) connected by thin white lines, forming a network-like structure. In the bottom-right corner, there are more light blue bokeh circles. In the bottom-left corner, there is a faint white network pattern.

03

Classification

Progress in the Classification Task

Classification

- Dataset from TAU Vehicle Type Recognition Competition on Kaggle (<https://www.kaggle.com/competitions/vehicle/da>)
- Normally, it consists of 17 classes, but only 6 are used (Motorcycle, Car, Bicycle, Van, Bus, Truck)
- Dataset can be widened by combining other datasets or data augmentation

5

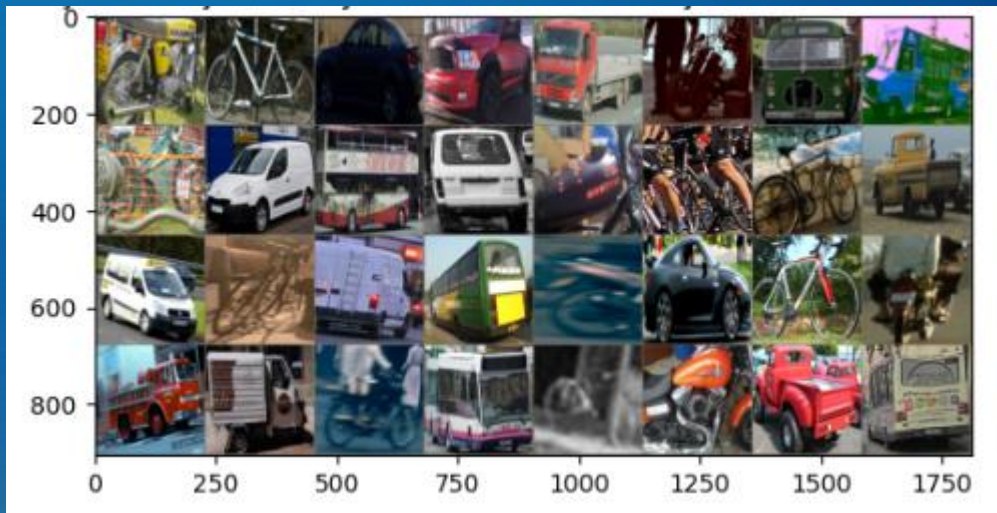
6

7

0

8

Classification



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0

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Classification

- ResNet50 is chosen as experimental training has been done
- The model seems to be trainable with default parameters
- Next Steps:
 - Data augmentation
 - HP tuning for real training
 - Obtaining the metrics (Precision, recall, F1)

5

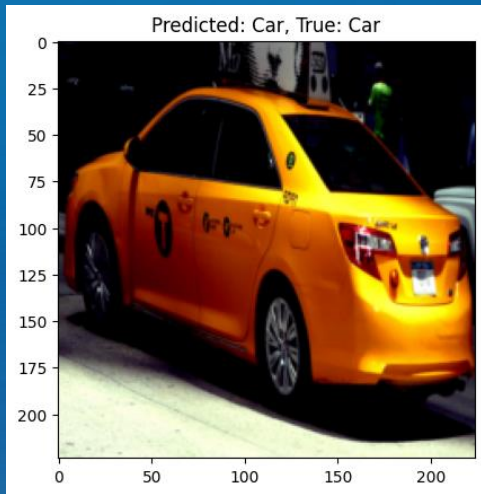
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Classification



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The background is a solid blue color. It features several white numbers (0, 1, 2, 3, 4) and geometric shapes (polygons, lines) scattered across the slide. Some numbers are large and bold, while others are smaller. The geometric shapes are composed of thin white lines connecting dots.

Thanks!

Q&A

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