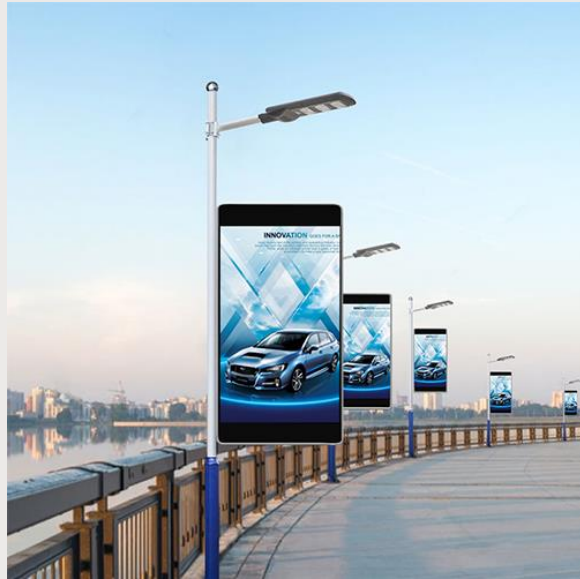# Image Car-Make Classification

Ibrahim & Abdulaziz

Why Car-Make Classification?

Outdoor targeted Advertisement

Changan Chery1 Chery2

Cityroen2 Ford Honda

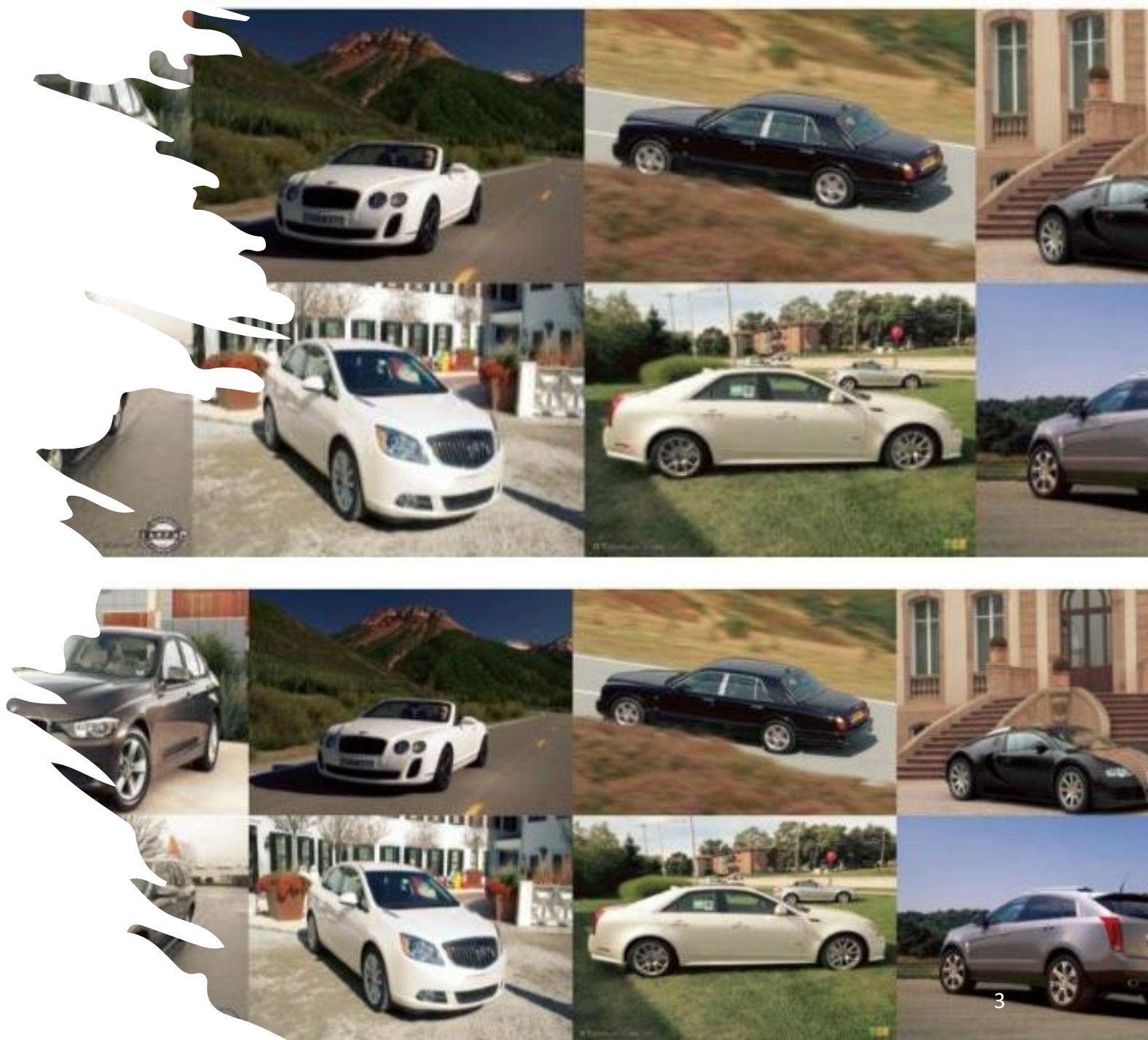Mazda Nissan1 Nissan2

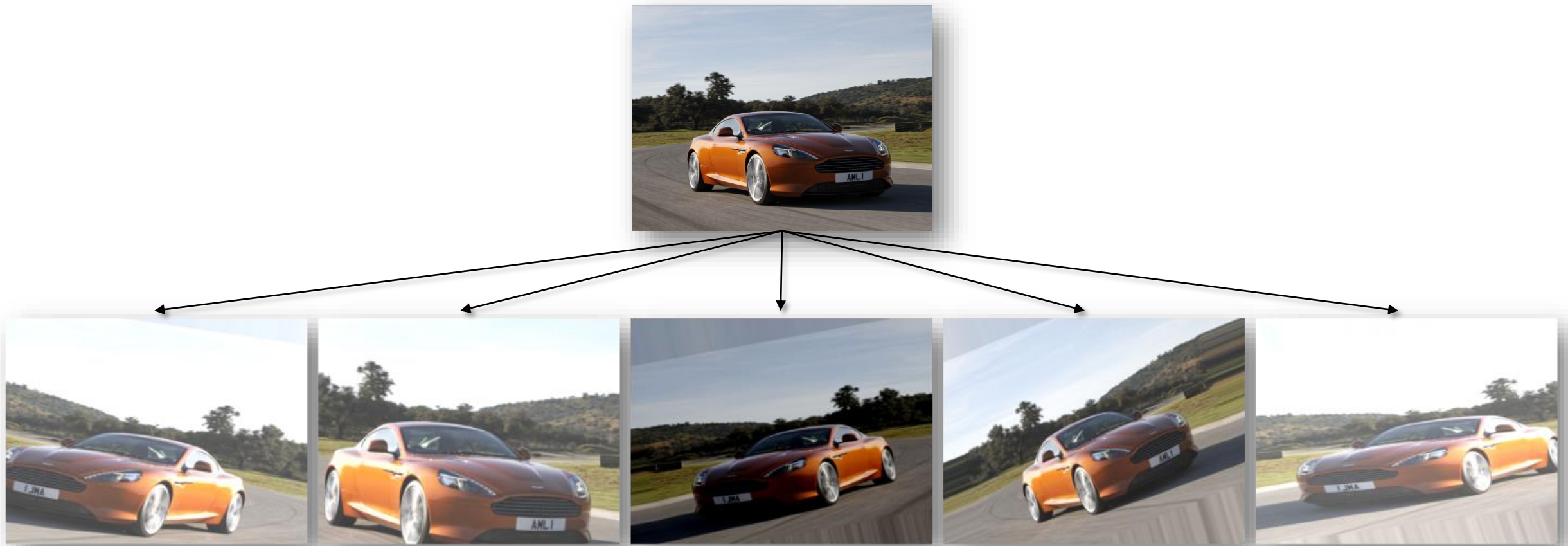Toyota2 Volkswagen1 Volkswagen2

Dataset

🖼️ 16k Images

🧠 9k for training
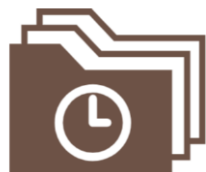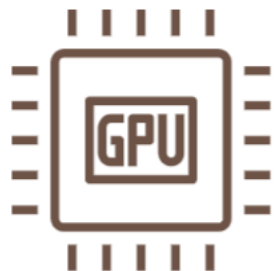
▦ 196 Classes of cars

Augmentation

Challenges

Code changes.

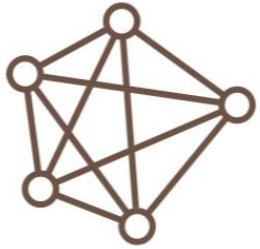Getting Tensorflow to recognize GPU was difficult

Tracking Experiments got messy
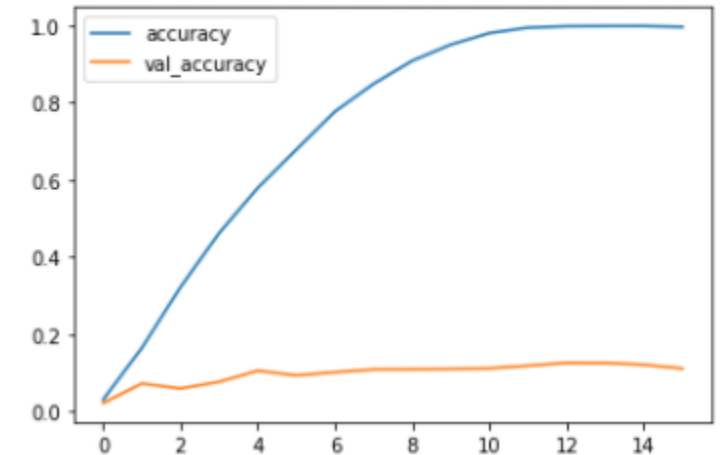
MobileNetV2 - Transfer Learning

Raw Images

Trainable FC

4096
4096
1024

It quickly overfitted trainning

Validation Stuck at minimum

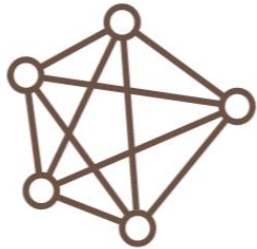# MobileNetV2 - Transfer Learning
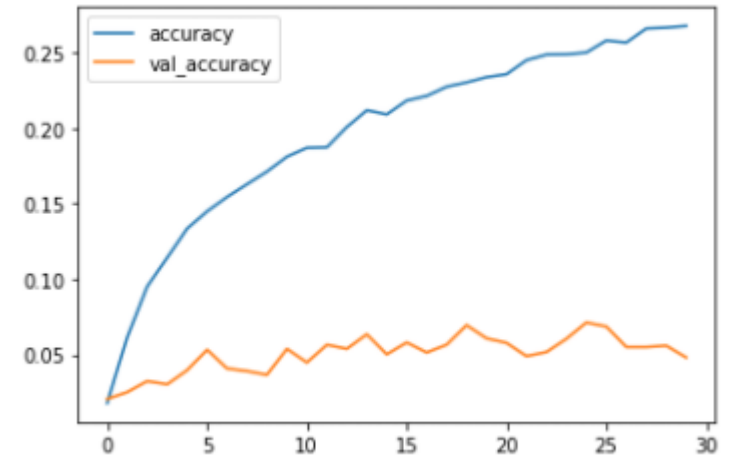
Raw Images

L2 regularization

Trainable FC

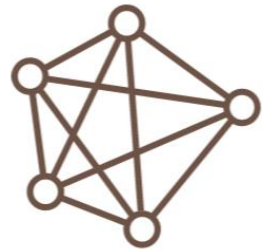1024
1024
512

Became Slower to Train

MobileNetV2 - Transfer Learning
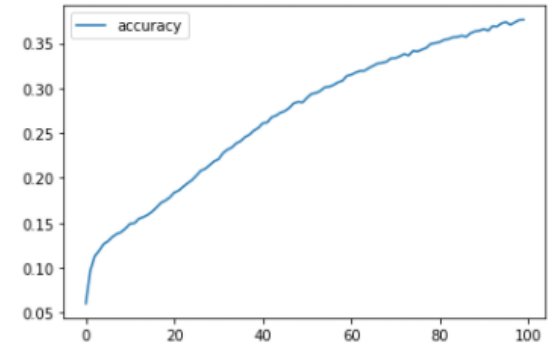

Augmented Images

L2 regularization

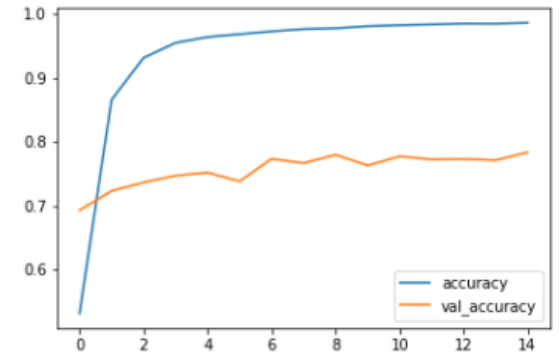Trainable FC

1024
1024
512

Became Slower to Train

Fluctuating Validation

Train only the last 24 layers
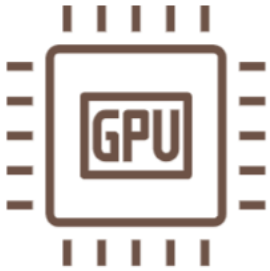
Augmented Images

Model still overfitted
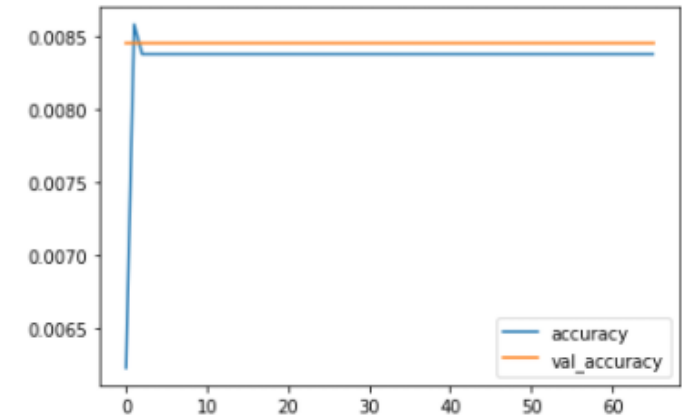
Higher Validation Accuracy

VGG-16 Experiment

Painfully slow.

Requires large GPU memory.

Wrong setup have wasted time.

Thank you