

Vehicle Type Classifier

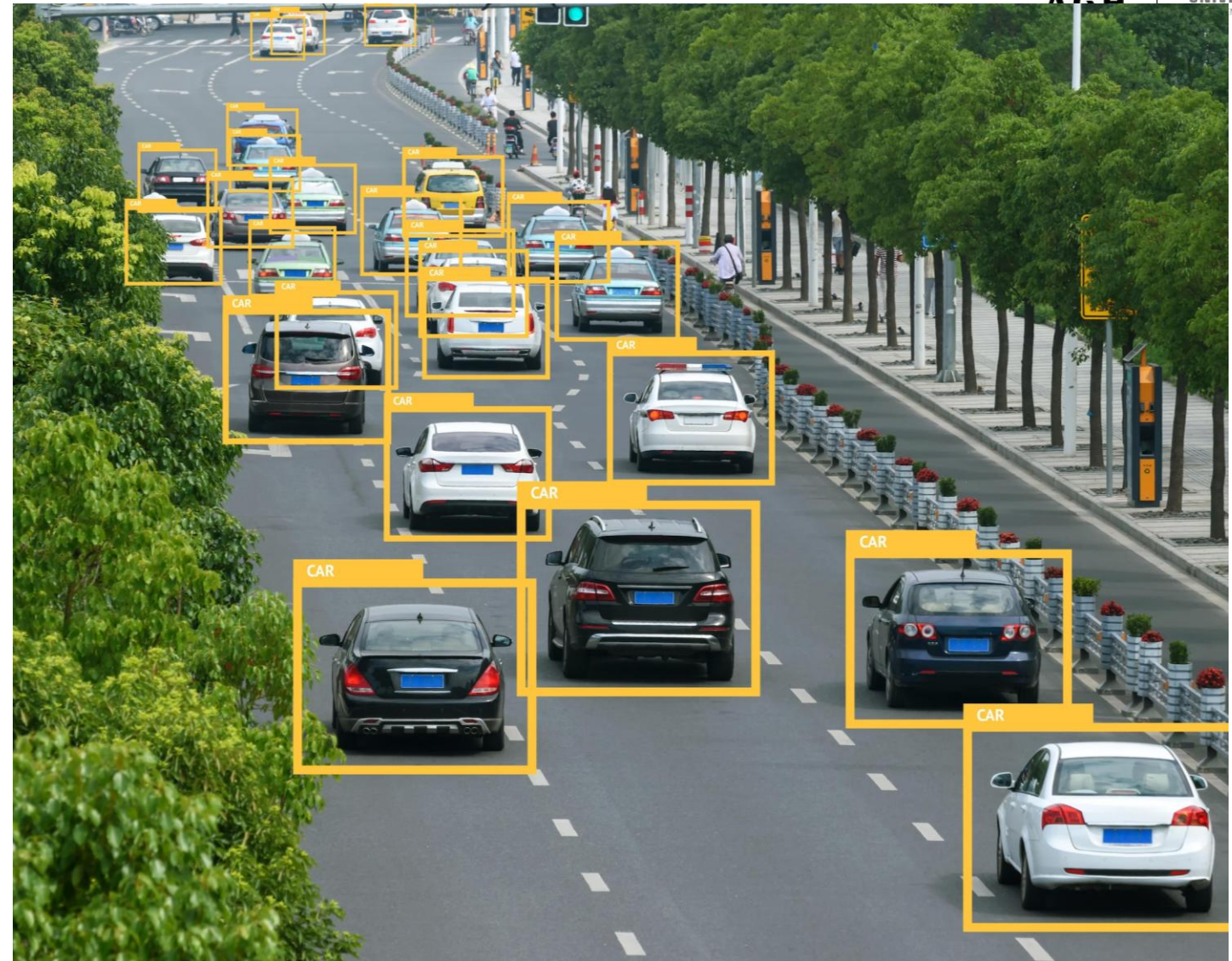
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Problem

The main objective of the project is to create an effective, simple and lightweight tool for classifying vehicle types.



<https://www.mouser.co.il/blog/mystery-of-vehicle-detection>

Dataset

We decided to use [Vehicle Images Dataset](#) which contains 15,645 color images with 7 classes of vehicles:

- City Car
- Sedan
- Multi Purpose Vehicle
- Sport Utility Vehicle
- Van
- Truck
- Big Truck

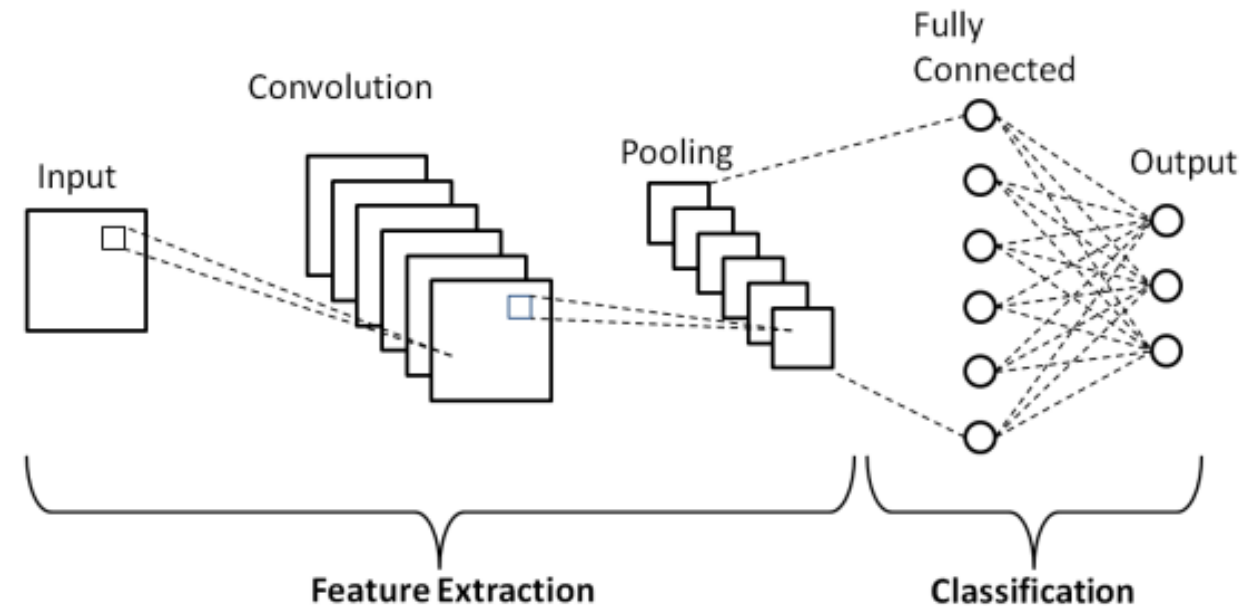
kaggle



<https://drlee.io/unlock-the-power-of-kaggle-how-to-call-datasets-directly-with-python-and-rule-the-data-science-2303cbae4e8a>

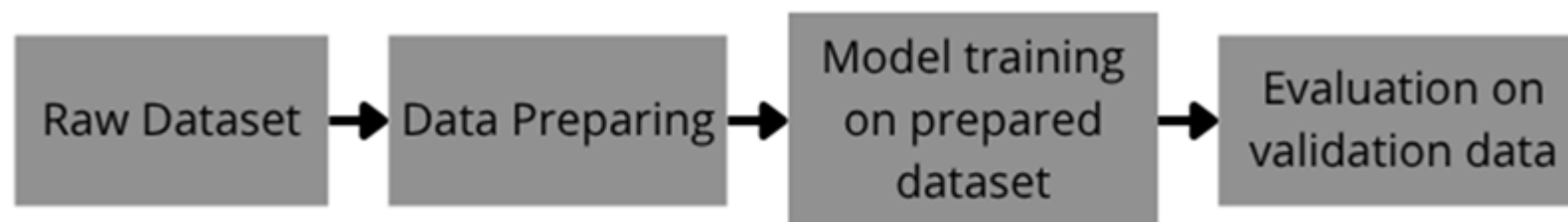
Model

The project will use a **lightweight CNN** designed for **vehicle type classification**, capable of extracting key image features and identifying vehicle categories efficiently.



<https://learnopencv.com/understanding-convolutional-neural-networks-cnn/>

Pipeline



Compression methods

As part of the project, the pruning method will be used and tested for model compression, which involves removing less important weights or neurons from the network and reducing its size, as well as the quantization method, which involves reducing precision by converting 32-bit floats to 8-bit integers.