**Vehicle Type Classification for Intelligent Transportation System**

Intelligent transportation systems have acknowledged a huge attention in last few decades. Vehicle classification is a key challenge in the road safety and intelligent transport applications.  The main task in this process is to discriminate the features of different vehicles. The advancements in image processing, pattern recognition and deep learning have overcome the barriers to achieve this. In this project, a vehicle type classification using convolutional neural network is made. Three types of vehicles like car, bus and bike are considered for classification. The entire images are given as input and create a bounding box with probability estimates of the feature classes as output.

A convolutional neural network (CNN) model is built with different architectures using parameters that are learned from the training dataset. Learning transfered from the early layers and only trained the last 4 layers as well as 3 fully connected layers added on the top of the base model. The model hit 99 % training accuracy and 82.23 % validation accuracy after 67 epochs.

**Dataset**

The dataset has a total of 1886 images divided between 3 classes: bicycles, cars, and motorbikes. It was split to training set (80%) and testing set(20%).

**CNN Model Used**

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