STRUCTURED ABSTRACT

Context:

According to a report from the CDC motor vehicle safety division, one in five car accidents is caused by a distracted driver. This has just become like drunken driving. Almost 425,000 people injured and 3,000 people killed by distracted driving every year**.**

Objective:

State Farm Insurance company has given us a dataset of 2D dashboard camera images, and we need to develop an algorithm to detect and classify driver's behaviour and check if they are driving attentively or not. We are trying to create deep learning architecture to create models and predict and classify them by training them.

Method:

We are using the python programming language to implement the Deep learning algorithms like CNN where we are building one model from scratch and the using transfer learning with models like VGG16 and InceptionV3 to see if the accuracy improves. We are using keras.tensorflow for the implementations.

Results:

After evaluating all the three models, i.e, the convolutional neural network that we built from scratch, the transfer learning models based on VGG16 and Inception V3, we see that VGG16 works comparatively best among all of them with an accuracy of 67.55%.

Novelty:

Here we used deep learning algorithms such as convolutional neural network that performs better on image dataset as compared to traditional machine learning algorithms. The models and the architecture built in this project can be further tweaked and various combinations of hyperparameters can be tried to improve the efficiency of the model.

Key Images: CNN with VGG16 transfer learning