Distracted Driver Detection

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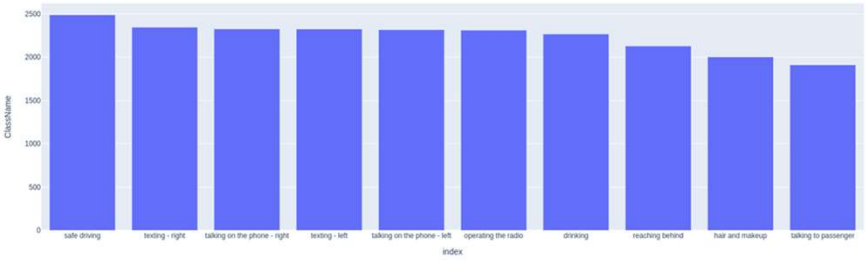
Abstract

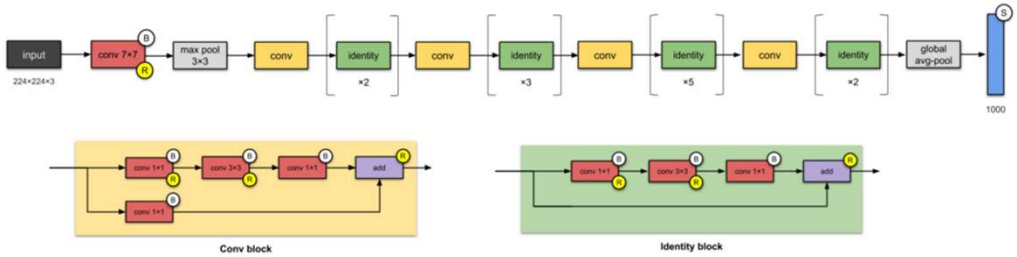
In this problem statement, we are given driver images, each taken in a car with a driver doing something in the car (texting, eating, talking on the phone, makeup, reaching behind, etc). Our goal is to predict the likelihood of what the driver is doing in each picture.

Problem Formulation



- Preprocessing
  - convert all images into 64*64, followed by normalization and standardization
  - categorical encoding of the output classes
- Architecture of the Model: Convolution Layer + Max Pooling layer + Dropout + Flatten + Dense
- Plot training and validation accuracy(and loss)
- Plot heat-map of y_{test} and $y_{prediction}$.
- Calculate precision, recall and F1 score

Model



Results

Conclusion

- Using a classification model we are trying to predict the type of distraction the driver is under.
- This classification would help us analyze what distracts most of the drivers and what measures can be used to avoid them.