



Ahmedabad
University

CSE 541 Computer Vision

Progress Report:

Distracted Driver Detection

Group Details:

Abraca-data

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Tasks performed in the week:

This week, we brainstormed various approaches to the problem with their pros and cons. Weighing the approaches according to the feasibility and data availability we were able to narrow down the list of such approaches. We researched different architectures and pre-processing methods. We cleaned our data and converted it into a proper format.

Outcomes of the tasks performed:

We got a good understanding of our problem and our dataset based on which we have found a clear roadmap to proceed further. After reformatting the data to make it more suitable for training and visualization purposes, we made some visualizations about the number of images corresponding to each category and the types of images within a category. We found out that the size of the training dataset is quite small when compared to the testing dataset and thus we may need to incorporate various data augmentation techniques to prevent overfitting.

Tasks to be performed in the upcoming week:

We are planning to pre-process the data i.e we would be converting all the images to 64*64 dimensions and standardizing the whole dataset. Optimistically we are also thinking about using some data augmentation techniques and expanding our dataset because the one we found has comparatively less data than we require.

Links for important sources:

1. <https://ieeexplore.ieee.org/document/8575304>
2. <https://neptune.ai/blog/image-classification-tips-and-tricks-from-13-kaggle-competitions>
3. https://www.researchgate.net/publication/326416658_Distracted_Driver_Detection_and_Classification
4. https://www.academia.edu/36964710/Distracted_Driver_Detection_and_Classification
5. <https://ieeexplore.ieee.org/document/9214233>
6. <https://www.kaggle.com/c/state-farm-distracted-driver-detection/discussion/22615>
7. <https://www.kaggle.com/vinaykakkad/cv-abraca-data-week-1>