CSE 541 Computer Vision

Progress Report:

Distracted Driver Detection

Group Details:

Abraca-data

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Tasks performed this week

- Studied concepts of Transfer learning.
- Studied properties of existing neural nets that are generalized by training on very large datasets.
- Studied about:
    - Layers of CNN
        - Convolution - to get more information about the high level features of the data
        - Pooling - to avoid overfitting and improve efficiency
        - Fully connected - reduce the parameters further and further aid the classification after the initial layers provide feature extraction
    - Dropouts to avoid overfitting
    - Different activation functions

Outcomes of the task performed this week

- Were able to better understand which model to use for our dataset.
- Tried implementing transfer learning on a sample data.
- Prepared the data for feeding into the neural networks.
    - Flattened the images
    - Normalize the images to improve efficiency
    - Categorically encoding the output variables

Tasks to be performed in the upcoming week

- Change and interpret different layers of the neural network
- Implement concepts of transfer learning on our dataset

Important Links

- https://towardsdatascience.com/a-comprehensive-hands-on-guide-to-transfer-learning-with-real-world-applications-in-deep-learning-212bf3b2f27a
- https://towardsdatascience.com/illustrated-10-cnn-architectures-95d78ace614d
- https://cs231n.github.io/convolutional-networks/