**Project proposal**

**--Age Prediction Based on CNN and Transfer Learning**

1. **Members in group:**

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1. **Problem description:**

What we are going to do is to build up a deep neural network which can automatically predict ages of people in given facial images. The resources and datasets are offered by the *IMDB-WIKI – 500k+ face images with age and gender labels (https://data.vision.ee.ethz.ch/cvl/rrothe/imdb-wiki/).* Precisely, this deep model will be able to take in several facial images of different people to predict the actual ages ranging from 0 to 100 by simply judging from the facial features.

1. **Approaches:**

The dataset we used contains the images and corresponding features such as name of the person,date of the photo taken,genders etc.We first create a dataframe object and do some data preprocessing work to obtain the label we need.Then,we drop out some unwanted images to make our dataset cleaner.After that,we import the famous pre-trained VGG network and apply transfer learning.We remove the last layers of the VGG net and add our own layers to make the network output a number ranging from 0 to 100 to predict the ages. The major approach used in this image classification problem is utilizing deep neural network and transfer learning as well as general file I/O of Python to better train our model and improve the accuracy and robustness of prediction.

1. **Data set:**

The *IMDB-WIKI – 500k+ face images with age and gender labels* website offered the needed data set which contains the facial images files of different people with labels,but with some “noise” images such as images containing more than one person or stuff other than people.We have to do some data preprocessing work to obtain clean dataset for the training and testing process. All files in the data set are JPG files.The total number of samples we use are around 20k.