**Comparison of CNN and LBPH Face Recognition Systems**

*Plan of attack:*

In this project, I am going to develope a Face Recognition model with both Convolutional Neural Network and LBPH Face Recognizer which will be able to identify faces and recognize who can be seen on the images as accuartely as possible. Also, I am going to compare their performances in terms of accuracy, model complexity, running time, just to name a few examples.

I am going to work with the well-known ORL\_faces.npz dataset which contains face images of 40 unique people, 10 images per person. I downloaded the labeled images from the open source below:

<https://gitlab.com/knork/data>

In both cases, the downloaded images will be split into training and testing set in order to evaluate the trained models.

In the first phase of the LBPH Face recognizing project, I am going to check how accuartely it can identify faces, later on I will create a model which should be able to recognize faces seen on the images.

Finally, I will test the models with unseen images and examine it with different accuracy metrics.

*Method:*

I preferably would use OpenCV for training and deploying the LBPH face recognizing model. For the face detection phase, I am going to apply a pretrained Haarcascade Classifier for frontal faces.

For building the CNN model, I will primarily use Python’s keras module using Tensorflow backend.

I will also use Sklearn module for accuracy evaluation as well as Python’s Matplotlib and Pillow libraries for image manipulation purposes.