

Guided Projects Artificial Intelligence & Machine Learning

Guided Projects: Feature Engineering

Face Feature Extraction

The face recognition system consists of a feature extraction step and a classification step. **Principal component analysis (PCA)** is widely used in such scenarios to construct the feature space and extract features, substantially reducing the dimensionality of the input feature vector/image. The reduced feature vector can then be used for the purpose of face analysis.

Question:

Using **PCA** create a face recognition system that gives access to only certain people. To implement this, you can use LFW_peoples dataset provided in the scikit-learn library. Given this dataset, use only those classes that have a minimum (use `min_faces_per_person = 70, resize = 0.4`) 70 images (should give you only 11 classes). Given this subset of images, apply PA to obtain the corresponding eigen face for each class. You can additionally train a classifier for recognition purpose.