Guided Projects Artificial Intelligence & Machine Learning

Guided Projects: Deep Learning

Face Detection, Recognition & Search

Face detection can be regarded as a specific case of **object-class detection**, which focuses on the detection of **frontal human faces**. Once the facial region is obtained, we can use deep learning methods such as **CNNs to extract** a wide range of **features from images**. **Deep neural networks** can be used to produce a bunch of numbers each of which describes a face (known as face encodings) and can be used for **both facial recognition and search.**

Question:

Face recognition such as that used in our phones, relies on two important steps. First step is face detection, which can be implemented using simple classifiers (such as Haar Cascade) or CNNs. Second part involves the recognition of the identity of the person, which further uses a CNN for this task. Implement a face recognition network using Haar Cascade for detection, followed by using VGG-19 for the task of recognition. Make sure you use a pre-trained VGG model and freeze the weights of starting layers before fine tuning the model