FACIAL RECOGNITION

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INTRODUCTION

A Facial recognition is a domain in computer vision that provides ways by which a human or(even animals) can be recognized automatically from his 2d or even 3d Image, it has several usages in our daily life such as :

- Video surveillance
- Robotics
- Social Media, etc.

So we have tried to build a facial recognition System in Python using OpenCV library for Image Processing and the Keras library for deep learning

PHASES DESCRIPTIONS

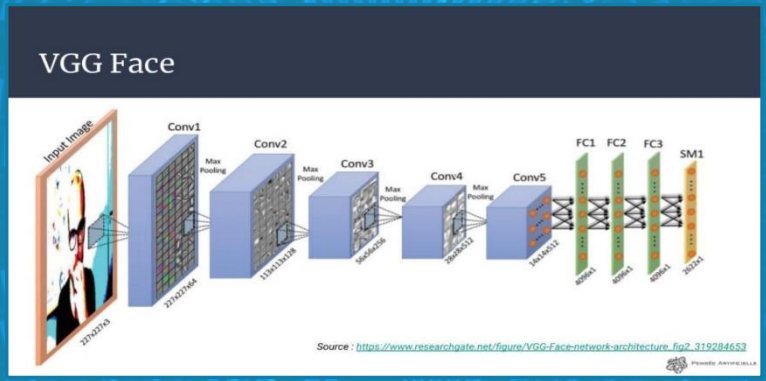
INPUT: as an input we have a colored image of an IMAGINA student with his face facing the front

1.FACE DETECTION PHASE

By using the Viola and Jones Algorithm that uses Haar Features we are able to detect the face in the Image

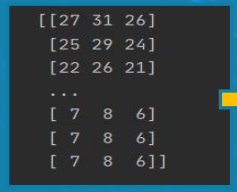
2.THE FACE ANALYSIS PHASE

After extracting the face from the image it is passed through a pretrained Convolutional neural network (VGG face to be exact) that consists of around 13 convolution layers(Rectifier Activation Function) with different kernel size and number of filters coupled with a Max pooling of stride 2 , after flattening it is passed through an ANN of 3 Fully connected layers followed by an output layer with a **SoftMax** activation function



3.Detection Phase

After being passed through a CNN the image is now represented by a vector of features that is compared to a database of other preprocessed images to find the closet image by finding the one that has the minimum angle with the input image



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