

Person Recognition Using Tensorflow

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Abstract: Face Recognition is one of the key areas under research. It has number of applications and uses. Many methods and algorithms are put forward like, 3D facial recognition etc. Face recognition comes under Biometric identification like iris, retina, fingerprints etc. The features of the face are called biometric identifiers.

Introduction

Facial recognition is a biometric solution that measures unique characteristics about one's face. To perform facial recognition, you'll need a way to uniquely represent a face. We propose a novel method for face recognition using TensorFlow. These systems can be well incorporated into mobile and embedded systems efficiently and can be utilized on larger scale. Face recognition becomes challenging with varied illumination and pose conditions. This method over comes the varied illumination problem and detection in noisy environments.

2. Literature Survey

[1] **Mr. Johannes Brändle, Mr.Christian Eppler, & Mr. Stefan Möbius, "Face recognition with deep learning for mobile applications",2015:**

There already exist very good approaches for face recognition on desktop systems. For Examples Facebook recently developed DeepFace, a nine-layer deep neural network with more than 120 million parameters and an accuracy of 97.35 on the Labeled Faces in the Wild (LFW) dataset [27].

[2] **Mr. Narayan T. Deshpande and Dr. S. Ravishankar, "Face Detection and Recognition using Viola-Jones algorithm and Fusion of PCA and ANN", 2015:**

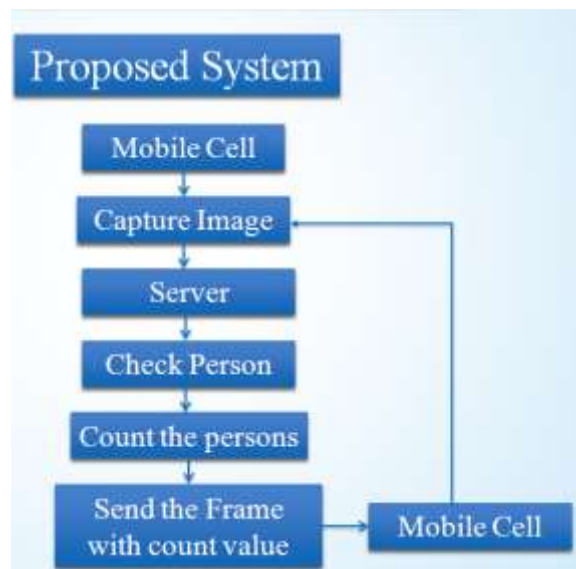
The human face is a complicated multidimensional visual model and hence it is very difficult to develop a computational model for recognizing it. The paper presents a methodology for recognizing the human face based on the features derived from the image.

[3] **Mr.Xiao-Ling Xia , Mr.Cui Xu*2 and Mr.Bing Nan3, "Facial Expression Recognition Based on TensorFlow Platform",2010:**

Facial expression recognition is an important part of human emotion recognition, which is widely used in human-computer interaction, pattern recognition, image understanding, machine vision and other fields. There are more than 10 thousand kinds of expressions, and different people have different ways to express their emotions.

3. Proposed System

We propose a real time face recognition system based on PCA and Mahala nobis distance. The main challenge for a face recognition system is of effective feature extraction. The proposed system utilizes the Eigen face method is information reduction for the images. There is an incredible amount of information present even in a small face image. A method must be able to break down pictures so as to effectively represent face images rather than images in general. 'base faces are generated and then image being analyzed can be represented by the system as a linear combination of these base faces. Each face that we wish to classify can be projected into face-space and then analyzed as a vector. A k-nearest-neighbor approach, a neural network or even a simple Euclidian distance measure can be used for classification. The proposed system uses Principal Component analysis for feature extraction and various distance classifiers such as the Euclidian distance, the Manhattan distance and the Mahala nobis distance. The technique used here involves generating the 'eigen faces' then projecting training data into face-space to be used with a predetermined classification method and evaluation of a projected test element by projecting it into face space and comparing to training data. The proposed authentication system works as follows: In below diagram our project Work.



3.1 System Sequence Diagram:

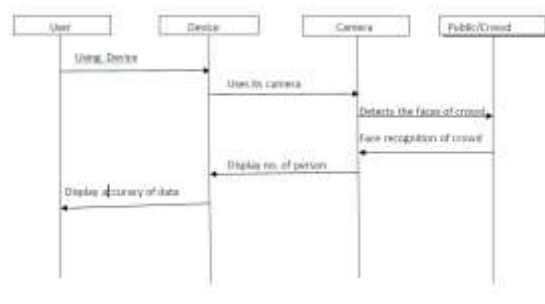


Figure 3.1 System Sequence Diagram

4. Applications

The following are the applications of the project:

4.1. Retail stores:

It helps to check conversion rate, Marketing effectiveness, staff planning.

4.2. Shopping Malls:

It helps to check Monitoring of high-traffic areas, determining popularity of particular brands.

4.3. It will also help in Railway Station, Air ports, Taxi Stands, Bus stops, etc.

5. Acknowledgement

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6. References

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7. Conclusion

In this paper, we propose to build a facial recognition which allows various users to characterize their facial patterns. Our approach takes into account both extroversive and introversive behaviors. Based on the characterized social behavioral profiles, we are able to distinguish a user from others, which can be easily employed for compromised face recognition. Specifically, we introduce eight behavioral features to recognize a user’s facial behaviors, which include both its extroversive posting and introversive activities. A user’s statistical distributions of those feature values comprise its facial profile. While users’ behavior profiles diverge.

