“Banking Transaction using Facial Recognition”

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CONTENTS

Objective

In the present work the biometric face recognition payments is used in all kinds of payments. Thus it avoids the need to memorize different passwords. Face recognition payment system is **safe, secure and even easy to use**. It is reliable and more efficient compared to other payment technologies.

Introduction

The ATM was invented in 20th century from then a lot of changes have been made in it. We tried to improve the security integrating face recognition into the system with the help of Machine Learning. The ATM machines used to withdraw money using the debit & credit cards are introduced, installed and spread to the vast in our society. But there are many unauthorized access attempted in the ATM by knowing the password of card holder and Withdrawing money without the knowledge of the card holder, this leads to a

serious problem for both card holder and the bank. To rectify this type of problem we introduce this project to provide a safety mechanism for ATM’s .

This project deals about the method to prevent the ATM security threat related to unauthorized users by allowing access to the user only after the confirmation of the user identity by using camera.

Existing Systems

1. The **ATM using Face Recognition System** is indicate the way to a lot of forgery attempt and abuse through card theft and pin theft of customer account details . This system works based on the face matched with the image of Account holder and the current image of the user. In this system they are used many components like Face Detector, Face Recognizer, 2-D, 3 - D Technique and Surface Texture Analysis.

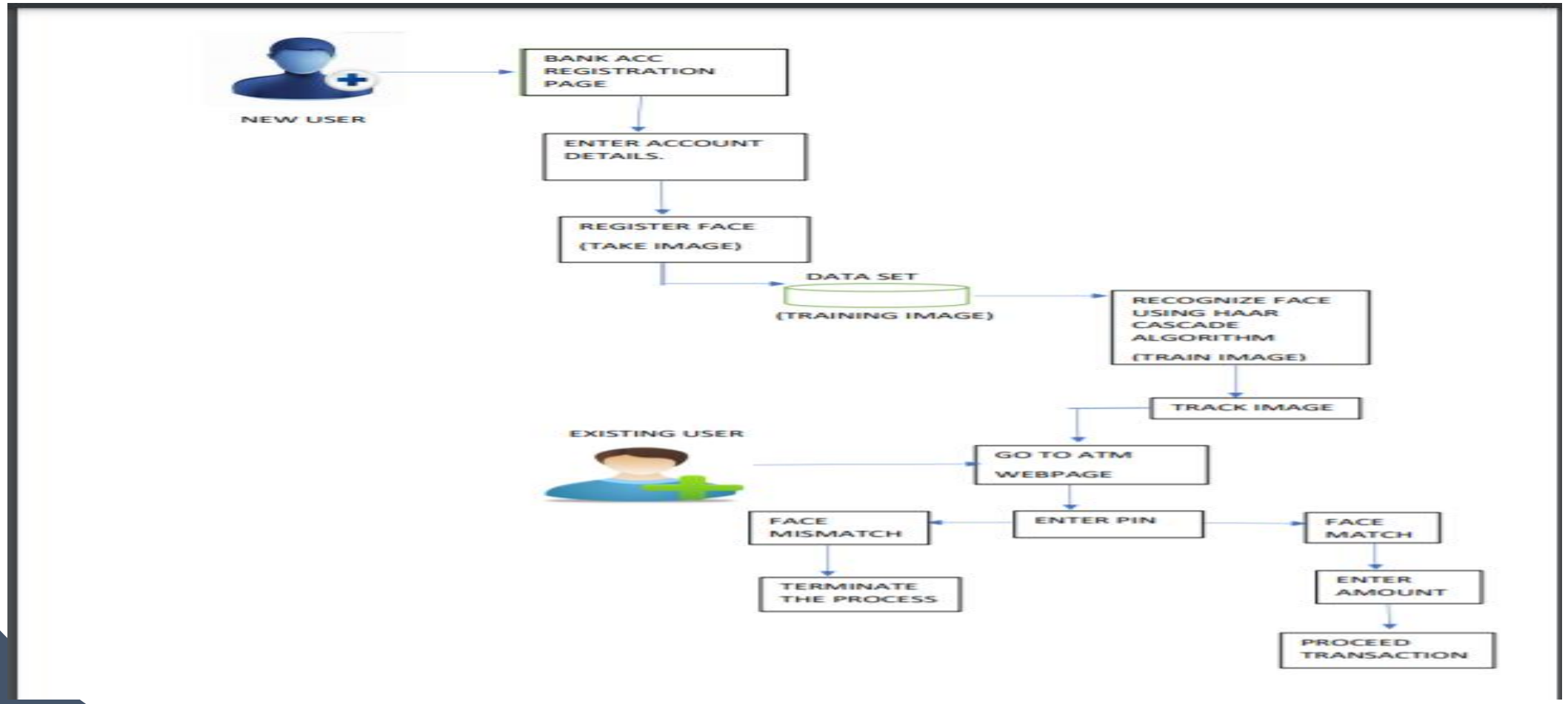
ATM Security using Machine Learning techniques in IOT

2. The main idea of this system is to secure the ATM by using face recognition and prevent unauthorized access. After inserting a card the transaction will be permitted only after the images captured by the CCTV and it will matches with the original account holder. When both of the images is same means the transaction will be continue otherwise the One Time Password (OTP) send to the register mobile number of the accountholder .

Proposed System

There are many methods to detect the face. But in this project, we are going to use haar cascade model to detect the face. The haar cascade algorithm makes use of a kind of filter to perform feature extraction from the given image. These filters inspect only one portion of the image at a time. Then the intensity of the pixels in the white portion and in the black portion is added. The result of subtraction of these two summations is the feature extracted value.

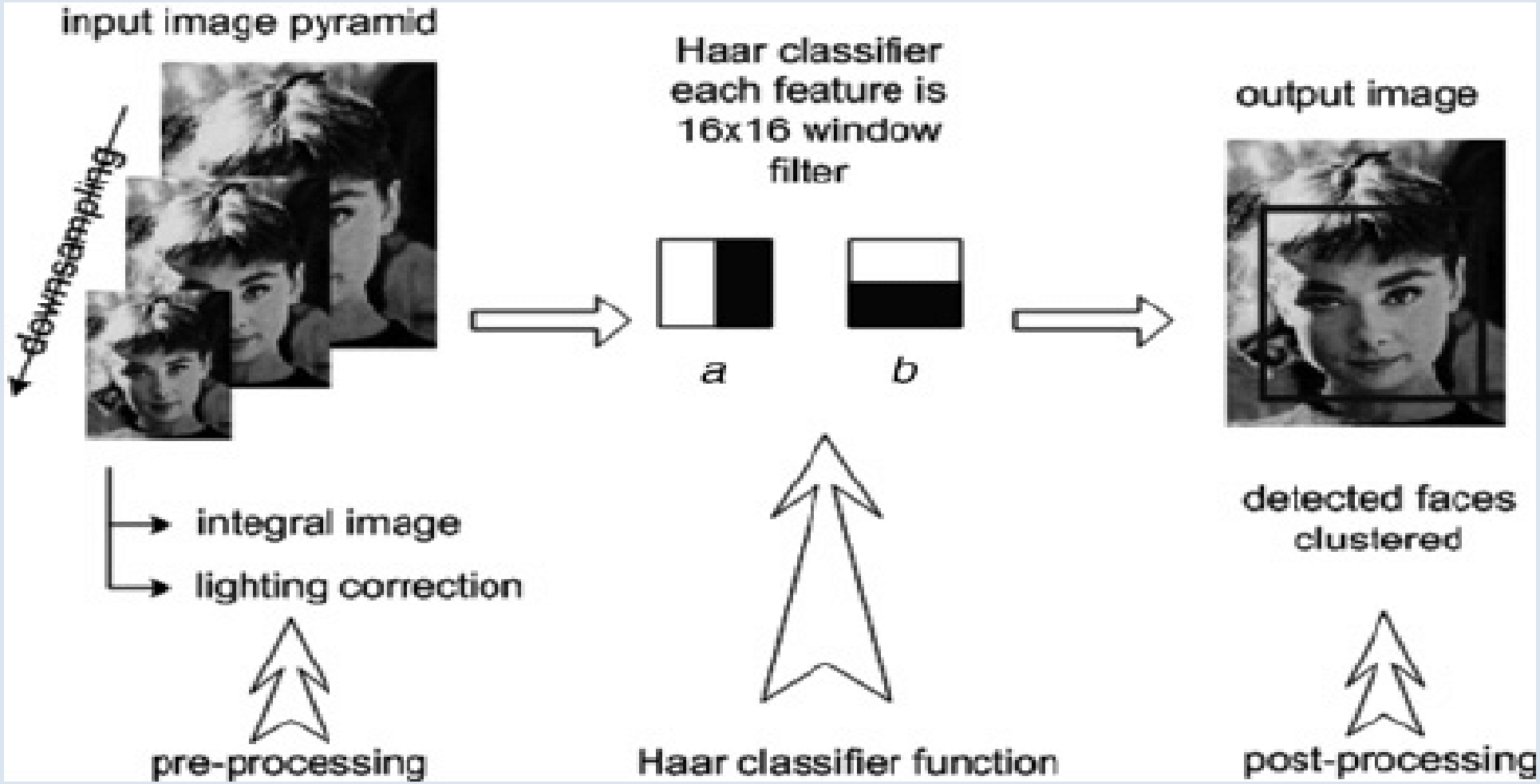
Architecture



Implementation

FACE DETECTION: Haar Cascade based algorithm has been applied for fast and simple face detection from the input images. The face images is then being converted into **grayscale image** .Face detection modules analyses each captured frame and extracts valid faces from each frame. This is very easy for humans, but computers need precise instruction. It is distinct from other computer vision technologies that involve human faces, like facial recognition ,analysis ,and tracking. Haar -Like is a rectangular simple feature that is used as an input feature for cascaded classifier In there are some filters based on Haar -Like feature. By applying every one of these filters into one special area of the image, the pixel sums under white areas are subtracted from the pixel sums under the black areas. That is the weight of white and black area can be considered as "1" and "-1", respectively.

Working

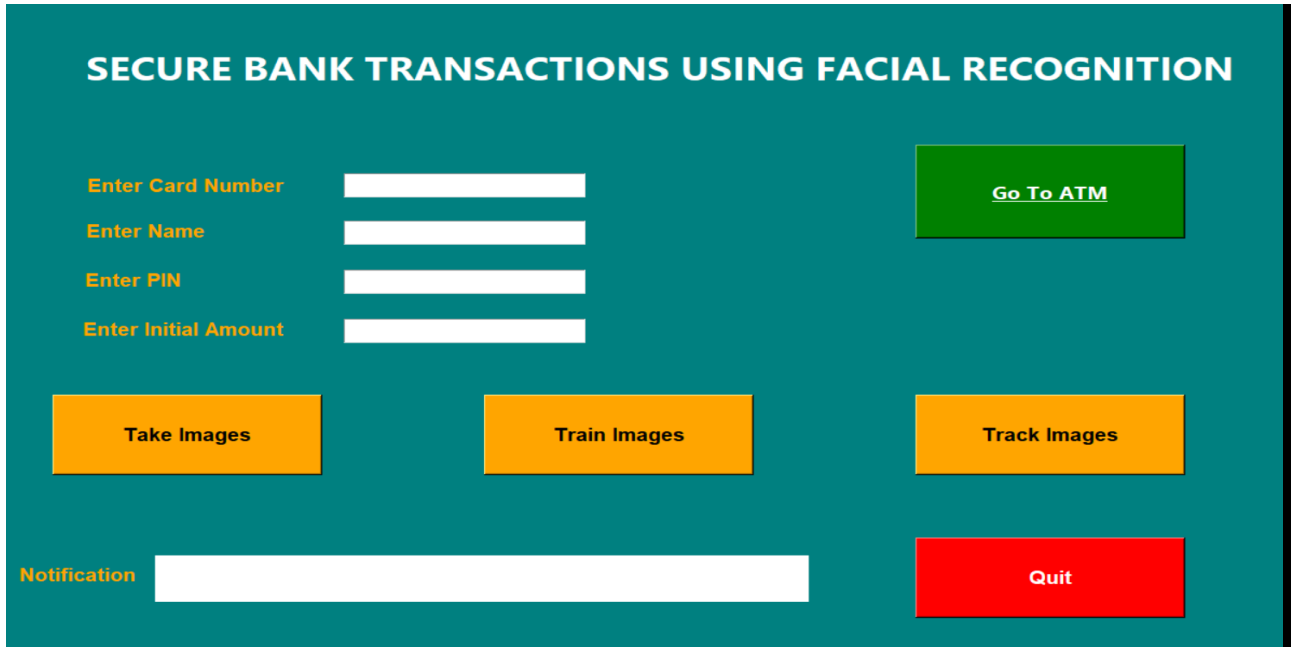

input image pyramid
downsampling
Haar classifier
each feature is
16x16 window
filter
a
b
output image
integral image
lighting correction
detected faces
clustered
pre-processing
Haar classifier function
post-processing

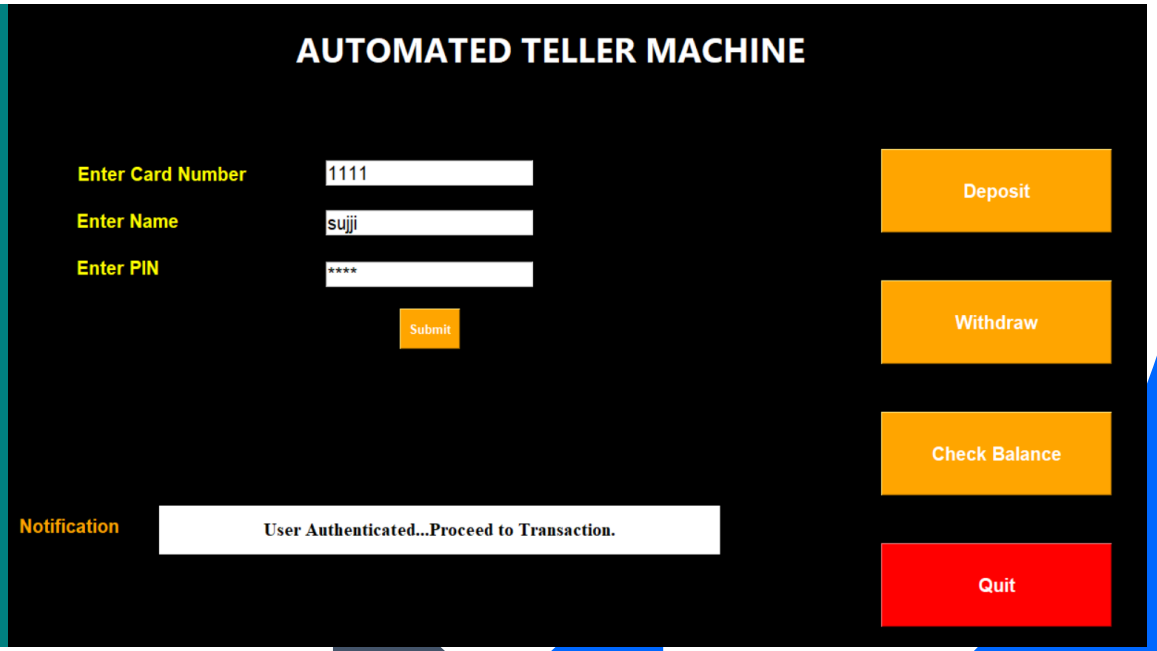
Ideal for access control, financial transactions and ATM machines. The face key recognition technology performs the following tasks:

- a. Locates a moving object within the camera view
- b. Determines if the moving object is face
- c. Compares live faces with samples from database

Result

Screen Shots of results for our proposed Model





Conclusion

This project developed banking transactions using facial identification namely, transfer amounts, card details, names of participants, etc. once facial identity is matched then transaction will finish otherwise it will display “user not verified”. existing system was over come. If previous no one can implement this system in Indian bank sector .in this project main focus is safety of our money and our transaction. We are using Haar Cascade algorithm for face recognition. Capture module deals with the configuration of video interface and performs the real-time video capture. Face Detection module analyses each captured frame and extracts valid faces from each frame. Face Identification deals with face recognition and verification of the detected face.

Thank you

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