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SIM Card Based Smart Banking Using FPGA

Tushar Gupta, Sonam Sharma, Himja Bhardwaj, Pardeshi Rushikesh

Abstract*— *Automated teller machines (ATMs) are well known devices typically used by individuals to carry out a variety of personal and business financial transactions and/or banking functions. ATMs have become very popular with the general public for their availability and general user friendliness. ATMs are now found in many locations having a regular or high volume of consumer traffic. For example, ATMs are typically found in restaurants, supermarkets, Convenience stores, malls, schools, gas stations, hotels, work locations, banking centers, airports, entertainment establishments, transportation facilities and a myriad of other locations. ATMs are typically available to consumers on a continuous basis such that consumers have the ability to carryout their ATM financial transactions and/or banking functions at any time of the day and on any day of the week..

Keywords- ATMs, ATM.

I. INTRODUCTION

The information age is quickly revolutionizing the way transactions are completed.Everyday actions are increasingly Being handled electronically, instead of with pencil and paper or face to face. This growth in electronic transactions has resulted in a greater demand for fast and accurate user identification and authentication. Access codes for buildings, banks accounts and computer systems often use PIN's for identification and security clearances. Using the proper PIN gains access, the successful transactions can occur, but the user of the PIN is not verified. When ATM cards are lost or stolen, an unauthorized user can often come up with the correct personal codes. This paper describes how face recognition technology can help to the real world ATM machines

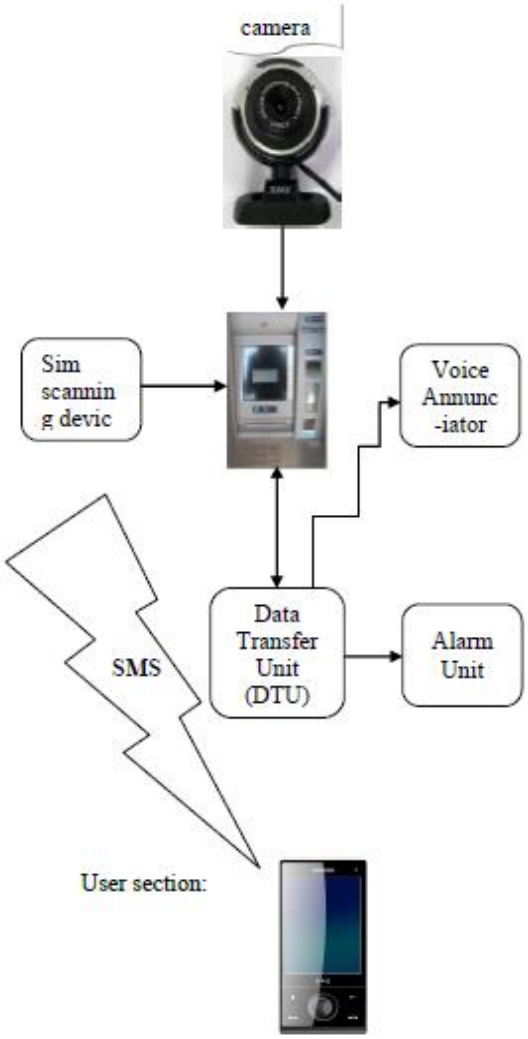

Fig. 1 Block Diagram

II. WORKING PRINCIPLE

A. Existing Atm Aystem:

Existing ATMs are convenient and easy to use for most consumers. Existing ATMs typically provide instructions on an ATM display screen that are read by a user to provide for interactive operation of the ATM. Having read the display screen instructions, a user is able to use and operate the ATM via data and information entered on a keypad. However the drawback in the existing system is that the user should carry their ATM card without fail. But in many cases we forget it. So only we designed a system which helps us to use the ATM machine without the ATM card.

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* Correspondence Author (s)
Tushar Gupta, Student, Dept of electronics & telecom engineering, Bharati Vidyapeeth College of Engineering, Pune India,
Sonam Sharma, Student, Dept of electronics & telecom engineering, Bharati Vidyapeeth College of Engineering, Pune India,
Himja Bhardwaj, Student, Dept of electronics & telecom engineering, Bharati Vidyapeeth College of Engineering, Pune India,
Pardeshi Rushikesh, Student, Dept of electronics & telecom engineering, Bharati Vidyapeeth College of Engineering, Pune India.

B. Proposed System:

In this proposed system we have created the new generation ATM machine which can be operator without the ATM card. By using this system ATM machine can be operator by using our SIM number in the mobile phones through an simple SMS. When we send a SMS from our SIM in the reader unit of the ATM machine it transfers the mobile to the server. In server we can collect the related information of the mobile number (i.e.) the users account details, their photo etc. the camera presented near the ATM machine will capture the users image and compare it with the user image in the server using MATLAB.

Only when the image matches it asks the pin number and further processing starts. Otherwise the process is terminated. So by using this system need of ATM card is completely eliminated we can operate the ATM machine by using our SIM itself. By using this system malfunctions can be avoided. Our transaction will be much secured.

One more application can also be added in this system for helping the blind people. In the existing system all the transactions are done through keyboard only. It may be difficult for blind people so we can also add voice enunciator to indicate each and very process to the blind people. It that enables a visually and/or hearing impaired individual to conveniently and easily carry out financial transactions or banking functions.

III. OPERATION

The first step is the capturing of a face image. This would normally be done using a still or video camera. The face image is passed to the recognition software for recognition (identification or verification). This would normally involve a number of steps such as normalizing the face image and then creating a 'template' of 'print' to be compared to those in the database. The match can either be a true match which would lead to investigative action or it might be a 'false positive' which means the recognition algorithm made a mistake and the alarm would be cancelled. Each element of the system can be located at different locations within a network, making it easy for a single operator to respond to a variety of systems.

Principal component analysis (PCA) involves a mathematical procedure which extracts facial features for recognition, this approach transforms face images into a small set of characteristic feature images called eigenfaces. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining variability as possible. These methods capture the local facial features and their geometric relationships. They often locate anchor points at key.

Facial features (eyes, nose, mouth, etc), connect these points to form a net and then measure the distances and angles of the netto create a unique face 'print'.

IV. APPLICATIONS

1- Banking applications
2- Security applications
3- Ease of access for blind people

V. CONCLUSION

Face recognition technologies have been associated generally with very costly top secure applications. In the Face recognition technology of ATM, pose variance, false positives are still a problem. Our paper has proposed a method of efficient 3D head tracking technique to overcome the consequence. Certain applications of face recognition technology are now cost effective, reliable and highly accurate. Face recognition technology can be used worldwide to access buildings, however it can be used in ATMs, which would helpaddress potential security threats in near future.

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