

Secure Real Time Embedded System For ATM Using Web Server

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Abstract

In today's growing world of ubiquitous computing environment devices are now essential tools that offer competitive business advantages. The design and implementation of previous ATM systems are not much secure as per the requirement of customers and security. The use of mobile handheld devices is expanding rapidly both within the commercial and distinct context. The technology advancement has made it possible to embed more facilities in mobile phones. While they provide benefits, they also pose new risks on security either by the information they contain or information that they can access remotely. Secure cash transaction is of serious concern in growing use of cash cards and internet transactions. Cash withdrawal cards, chip and pin facility is one of the facilities which have increasingly been used for business and social activities. However, there has been limited research focus on security and flexibility. This project will introduce the concept of physical browsing and development of a system that will allow users to use their mobile phones to securely withdraw cash from ATM machines.



1. INTRODUCTION

ATMs are typically available to consumers on a continuous basis such that consumers have the ability to carry out their ATM financial transactions and/or banking functions at any time of the day and on any day of the week. An automated teller machine or automatic teller machine (ATM) (American, Australian and Indian English), also known as an automated banking machine (ABM) in Canadian English, and a cash machine, cash point, cash line or sometimes a hole in the wall in British English and Hiberno-English, is a computerized telecommunications device that enables the clients of a financial institution to perform financial transactions without the need for a cashier, human clerk or bank teller. ATMs are known by various other names including ATM machine, automated banking machine, cash dispenser" and various regional variants derived from trademarks on ATM systems held by particular banks. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip that contains a unique card number and some security information such as an expiration date or CVVC (CVV). Authentication is provided by the customer entering a personal identification number (PIN).

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.

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 in the mobile phone. When we insert 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 MAT LAB. 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 annunciation 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.

2. EXISTING SYSTEM

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. The drawback in the existing system is that the user should carry their ATM card without fail. However in many cases we forget it. So only we designed a system which helps us to use the ATM machine without the ATM card.

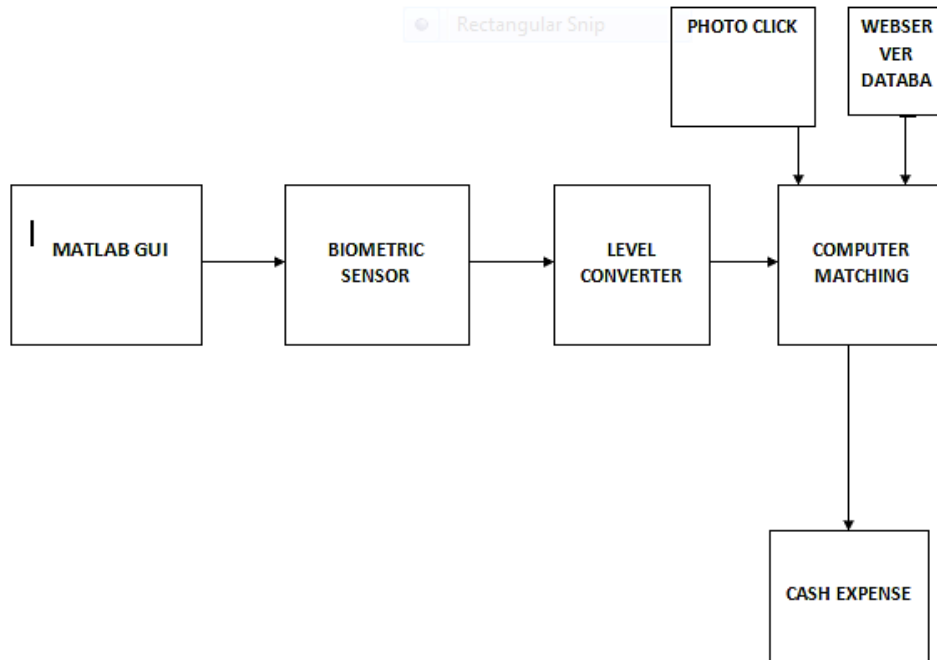


Figure 1: Block diagram of secure real time embedded system for ATM

The customize acquisitions, access the built-in features of hardware devices, and incorporate the analysis and visualization features of MATLAB and related toolboxes into your design. You can analyze or visualize your data, save it for post-processing, and make iterative updates to your test setup based on your analysis results. Data Acquisition Toolbox allows you to use MATLAB as a single, integrated environment to support the entire data acquisition, data analysis, and application development process. Data Acquisition Toolbox also supports Simulink with blocks that enable you to incorporate live data or hardware configuration directly into Simulink models. You can then verify and validate your model against live, measured data as part of the system development process.

3. SURVEY REVIEW

1. Jain, A.K. give a brief overview of the field of biometrics and summarize some of its advantages, disadvantages, strengths, limitations, and related privacy concerns. The purpose of such schemes is to ensure that the rendered services are accessed

only by a legitimate user and no one else. Examples of such applications include secure access to buildings, computer systems, laptops, cellular phones, and ATMs.

2. Jae Young Choi proposed annotation method has been evaluated using a variety of photo sets. The photo sets were constructed using 1385 photos from the MPEG-7 Visual Core Experiment 3 (VCE-3) data set and approximately 20000 photos collected from well-known photo-sharing websites. The reported experimental results show that the proposed face annotation method significantly outperforms traditional face annotation solutions at no additional computational cost, with accuracy gains of up to 25% for particular cases.
3. Bowyer, K.W analyze the interplay of technical and social issues involved in the widespread application of video surveillance for person identification.
4. Jie Zou implemented a complete face recognition system by integrating the best option of each step. Without training, illumination compensation and without any parameter tuning, it achieves superior performance on every category of the FERET test: near perfect classification accuracy (99.5%) on pictures taken on the same day regardless of indoor illumination variations, and significantly better than any other reported performance on pictures taken several days to more than a year apart. The most significant experiments were repeated on the AR database, with similar results.
5. Yu Su evaluates the proposed method using two large-scale face databases: FERET and FRGC version 2.0. Experiments show that the results of our method are impressively better than the best known results with the same evaluation protocol.

4. EFFECTIVENESS OF COLOR LOCAL TEXTURE FEATURES FOR FR

Here, we compare the FR using the proposed color local texture features with the FR using gray scale texture features and the FR using only color information. For FR using gray scale texture features, only luminance information is applied to extract gray scale Gabor wavelet or LBP features. In our experiments, the channel from color space was adopted for extracting gray scale texture features. For FR using only color information, given different color component images, individual color-component vectors were first generated in the form of a column vector by lexicographic ordering of the pixel elements of corresponding color-component images. In order to guarantee fair and stable comparisons with the method using this color local texture features, the low-dimensional features of these color-component vectors were then combined at the level of features. The resulting concatenated features are applied to FR. In order to validate the advantage of making use of the feature-level fusion approach to combining color local texture features, we report the experimental results obtained using the pro-posed feature-level fusion, as well as using the decision-level fusion. For the case of using the decision-level fusion, a sigmoid function followed by a sum normalization method was used to normalize the matching scores (e.g., distance scores). Also, the sum rule was adopted for combining these multiple matching scores at the decision level. It has been shown in that

the sum rule achieves the best classification performance in comparison with other decision-level fusion strategies, such as product and median rules. In the following three subsections, we present comparative experimental results to validate the effectiveness of color local texture features for FR under variations in illumination, pose, and resolution, respectively.

5. EXPERIMENTAL RESULT

In this the information about what the results are going to come at computer end. Image Processing Toolbox provides a comprehensive set of reference-standard algorithms and graphical tools for image processing, analysis, visualization, and algorithm development.



Figure 2: ATM Banking window

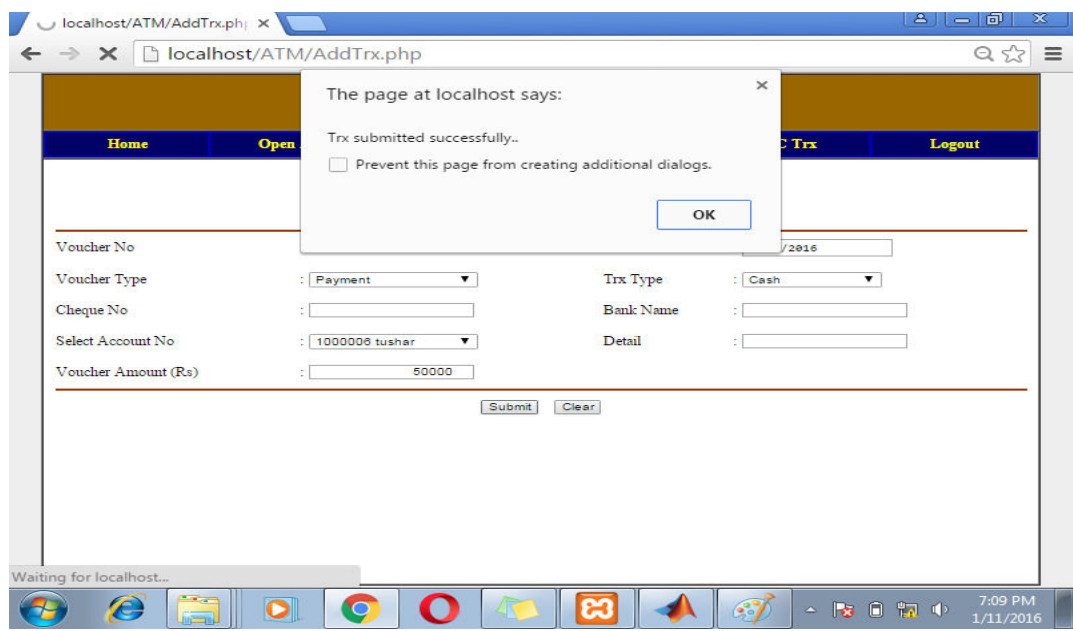


Figure 3: ATM Banking window



Figure 4. Transition Complete Window

6. CONCLUSION

In the proposed web server based secure real time embedded system for ATM, effective alert unit, process allusion module, mobile communication technologies. In this system each processing information produces by voice annunciation module. This process is effective for security, banking and data transferring application. In proposed two effective Color local texture features, i.e., CLBP and CLGW. In this paper it is suggested the feature-level fusion approach, which maximizes their complementary effect in the context of FR. The important result is the paper is color local texture features allows for a significant improvement in the FR accuracy.

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