THINK INDIA JOURNAL ISSN: 0971-1260

Vol-22-NO-30 Special Issue- December-2019

Fingerprint Based Attendance Management System In Classroom

Angelina Gill, Apash Roy

School of Computer Science and Engineering

Lovely Professional University, Jalandhar, Punjab, India, 144411

ABSTRACT

Pattern recognition is used everywhere in fields like hospitals, universities, medical use, banks, private sector. The speech, fingerprint, face recognition, handwritten recognition is being used for identification, security, and availability of the persons using biometrics machines.This research study engaged the use of quantitative research method which involves the analysis and processes of data before it can be meaningful. By using fingerprint can be avoid proxy attendance as well as consume the time.

Keywords: Authentication, Biometrics, Fingerprint, Identification, Signal

INTRODUCTION

A pattern is a procedure of descriptors or features. A human face, image, speech signal, fingerprint, a handwritten are part of pattern recognition. The machine involves techniques for assigning pattern to their respective classes-automatically and with as little human intervention as feasible by pattern recognition. Some information or features have been taken object from the system for recognizing an object [5].

The management of data safety can support many tools and techniques.But due to biometric has changed to support some features of information security.Identification, authentication, and non-repudiation in information security can be supported by biometric authentication. It has grown in fame as a method to provide own identification. An impression of the friction ridges of all or any part of the finger can be done by fingerprint [1]. The identification and verification of individuals by observed the human body can be done by Biometric technology and its features have been commonly used in various aspects of life for different purposes[8].Biometric recognition has included computer system security, banking security, health, and social services. In this review unimodal and multimodal, and their advantages and disadvantages have been presented. The term biometric comes into existence from the Greek words bios (life) and metrics (measure). Biometric recognition can be used for persons' characteristics such as face, gait or voice to recognize [4]. In

last era, the interest of fingerprint-based biometric has been increased extensively. Academia and industry as numerous research groups and companies developed new algorithms and techniques for fingerprint recognition enlarged dynamically and as well as developed innovative fingerprint acquisition sensors in the market. Only limited standards have been existing for matching for development in fingerprint verification. Designers frequently accomplish core tests over self-collected records [3]. Fingerprint attendance system purposes to systematize the attendance procedure of an educational institution using biometric technology. mark the attendance without the intervention of teacher used a hand-held device [2].The aim of fingerprint attendance system can automate the attendance procedure of an educational institution using biometric technology. Its main purpose is time-saving instead of wasted on calling out names and it gives a fool-proof method of attendance marking. During the lecture time the device can be passed and students can mark their attendance on biometric machines [6].A classroom attendance system based on fingerprint biometric is accessible through portable biometric machine. Its feature system is full of security and portability [10].The biometric method could effortlessly consent for impersonation and taking of attendance is time-consuming. It is hard to learn the number of students that have made the lowest percentage and thus eligible for exam [9].The growing importance of information technology is required for reliable person identification and the requirement of the shield and access control. The purpose of access granted is identification or verification. Every person positively recognized and known may obtain confident privileges [7]. An extremely specialized system that records students' attendance by comparing a single fingerprint image with the fingerprint images earlier stored in a database through an automated fingerprint attendance system. The main part of Student attendance system framework is hardware design, software design, attendance management approach and report generation [9].

RESEARCH GAP/QUESTIONS

Many organizations did not serve biometric attendance technology due to geometrical technology typical such as duplicability, cost-effectiveness, and the call for technology content are not taking into consideration.

The favorable research questions well-advised:

1) Which type of geometrical technology system are they aware with?

2) Does your organization require to follow up chromatogram of attendance of staff?

3) Do you like your organization should use a geometrical attendance system to potentiate employee attendance?

4) What version of geometrical technology will you like your organization should use?

RESEARCH OBJECTIVES

The main objective of this research is finding different types of biometric technology systems and study of its history and how can we improve the system, make it useful at present time[2].

1) Computerize attendance system

2) Attendance by biometric authentication through fingerprint

3) To protect the proxy attendance

METHODOLOGY

- Study the available documents on image improvement and details extraction techniques.
- Increase the arrangement of image improvement techniques to support the particulars activity process.
- Evolve a set of reliable techniques to take out facts from fingerprint images.
- Examine the performance of techniques used by the fingerprint data set.
- Using active techniques as the point of reference for comparison with the new technique developed.
- Afterward, reliable particulars detection techniques have been developed and verified, after which statistical analysis research was performed on the fingerprint data set and documented.

RESEARCH DESIGN

Research design is the strategy to find out the correct answer to research question. It should be clear objectives, questions and types of collected data sources, time, financial, place are ethical issues for discussing [8].This research study engaged the use of quantitative research method which involves the analysis and processes of data before it can be meaningful. Nevertheless, researchers are more facilitative by quantitative techniques such as charts, graphs,and statistics which allow them to obtain data and turn them into information[2].

SAMPLE POPULATION AND SAMPLE SIZE

The quantity of data that is required to be collected can be done by taking data from a minor group instead of whole population by using sampling techniques. The total number of students are about 3000, plus 150 staff, 10 department's head. This study will propose a geometrical technology

for all the students, staff and heads in the school. The entire group will affect the final of this research in time due to large number of individuals sampling so, a small group that has been targeted for completion of this research (Table 1).

Table 1: Sample population and sample size

Position	**Gender**		**Total**
	Male	**Female**	
Head	5	1	6
Student	16	18	34
Total	21	19	40

(Source: based on a review of literature)

While surveying the whole population and the cost required to survey the whole population is not fixed/gathered.So, a sample population for this study in the various departments of the organization. This sample survey consists of total 6 heads of departments, and 34 students in the school.

ASPECTED OUTCOME

To solve the problem of proxy and fake attendance of students and staff members in the classroom. This will also help us in avoid proxy attendance and will also help us in increasing students' and staff's efficiency as well as take less time for attendance.

CONCLUSION

The project "fingerprint attendance in classroom'' is very useful for institute or any organization and companies due to its authentication and identification. It will be successfully run. It will be time-consuming and automat manages the attendance in computer. No proxy and business will be done. Fingerprints can be captured successfully to be kept in the database and scanned fingerprints placed on the device sensor and compared against those stored in the database successfully. The system performance is acceptable and would be successful for implementation as its quick performance time and reports generation.

REFERENCES

[1] Bhattacharyya, D., Ranjan, R., Alisherov, F., & Choi, M. (2009). Biometric authentication: A review. I*nternational Journal of u-and e-service, science, and technology*, *2*(3), pp 13-28.

[2] Bansal, A.; Kumar, S.; Pandey, A. and Kishor, K. (2018). Attendance management system through fingerprint. *International journal for research in applied science &engineering technology* pp2140 -2148.

[3] Dario, M.; Capelli, R.; Wayman, J.L.; Jain, A. K.;(2002). FVC2000: Finger verification competition. *IEEE transactions on pattern analysis and machine intelligence*, 24(3): pp 402-412.

[4] Delac, K. and Grgic, M. (2004). A Survey of biometric Methods. *46th International syrposiumelectronics in marine, zadar. croatia*pp 184-193.

[5]Mohanta, R. K. and Sethi, B. (2012). A study on application of artificial neural network and genetic algorithm in pattern recognition.*International journal of computer science &engineering technology*, 3(2): 6-13.

[6] Mohamed, B. K., & Raghu, C. V. (2012). Fingerprint attendance system for classroom needs. *In annual IEEE India conference (INDICON)*pp. 433-438.

[7]Orsag, F., &Drahanský, M. (2003). Biometric Security Systems: Fingerprint and Speech Technology. In *IICAI* pp. 703-711.

[8]Oloyede, M. O., Adedoyin, A. O., &Adewole, K. S. (2013). Fingerprint biometric authentication for enhancing staff attendance system.

[9]Shoewu, O., & Idowu, O. A. (2012). Development of attendance management system using biometrics. *The pacific journal of science and technology*, *13*(1), pp300-307.

[10]Zainal, N. I., Sidek, K. A., Gunawan, T. S., Manser, H., &Kartiwi, M. (2014). Design and development of portable classroom attendance system based on arduino and fingerprint biometric. *The 5th international conference on information and communication technology for the muslimworld (ICT4M)* pp. 1-4.

