

RFID Based Face Detection Attendance System

Pawan Dhole¹ Akash Khandare² Swati Kakade³ Gaurav Dumre⁴ Prof. Manasi Kulkarni⁵

^{1,2,3,4,5}Department of Computer Engineering

^{1,2,3,4,5}Progressive Education Society's Modern College of Engineering, Shivajinagar, PUNE, India

Abstract— Effective and real-time face detection has been made possible by using the method of Local Binary Pattern since Viola and Jones' work. The software first captures an image of all the authorized persons and stores the information into database. Proposed work deals with automated system to detect and classify the Faces using PNN algorithm. The methodology comprised of three phases, first face Detection from images, second apply Local Binary Pattern algorithm for the purpose of feature extraction. The most valuable and exclusive structures of the face image are removed in the feature extraction stage. In the classification the face image is compared with the images from the database. In our research work, we empirically evaluate face recognition which considers both shape and texture information to represent face images based on Local Binary Patterns for person independent face recognition. The face area is first divided into small regions from which Local Binary Patterns (LBP), histograms are extracted and concatenated into a single feature vector. This feature vector forms an efficient representation of the face and is used to measure similarities between images in third phase and probabilistic neural network has been created and trained according to the features extracted from the image. Trained classifier classifies the label name of person.

Key words: RFID, Face Detection, Attendance System

I. INTRODUCTION

Checking the performance of students and maintaining the attendance is a tedious process for institute. Each institute has adopted their own method of taking attendance i.e. calling the names or by passing the sheets. Several very popular automatic attendance systems currently in use are RFID, IRIS, FINGERPRINT etc. However, making queue is essential in these cases thus requires more time and it is intrusive in nature. Any damage to RFID card can make inappropriate attendance. Apart from this deploying these systems on large scale is not cost efficient. In order to have a system both time and cost efficient with no human intervention, facial recognition is the suitable solution also face is people's preliminary scheme of person identification. With the rapid development in the fields of image processing such as pattern recognition, facial recognition and signature recognition the efficiency of this system is keep on increasing. This system is attempting to provide an automatic attendance system that transmits out the face recognition task through an image/video stream to best the attendance in addresses or sections and keeping the database of attendance. After making the file of the students/candidates, it requires almost zero efforts from the user side. Thus disturbing nature is absent in this scheme and makes the system effective.

II. PROBLEM STATEMENT

To implement automatic attendance system for institute using face detection and RFID card.

III. LITERATURE REVIEW

Most current techniques for minutiae extraction in fingerprint images utilize complex preprocessing and post processing. In this paper, we propose a new technique, based on the use of learned templates, which statistically characterize the minutiae. Templates are learned from examples by optimizing a criterion function using Lagrange's method. To detect the presence of minutiae in test images, templates are applied with appropriate orientations to the binary image only at selected potential minutia locations [1].

Most instructive institutions' administrators are worried about student irregular attendance. Absences can affect student overall theoretical performance. The conventional method of capturing attendance by calling names or validation on paper is very time intense and insecure, hence inefficient. Radio Frequency Identification (RFID) based attendance system is one of the solutions to address this problem. This system can be rummage-sale to take attendance for scholar in school, college, and university [2].

This paper labels a face detection framework, that is accomplished of dispensation images extremely fast while achieving high discovery rates. There are three key contributions. The first is the outline of a new image picture called the "Integral Image" which allows the topographies used by our sensor to be calculated very quickly. The second is a simple and effectual classifier which is built using the Ada Boost education algorithm to select a unimportant number of critical visual geographies from a very large set of Probable features. The third contribution is a method for merging classifiers in a "cascade" which allows related districts of the image to be speedily discarded while expenditure more addition on promising face-like regions [3].

Personnel discovery at border journeys has become a significant issue recently. To reduce the number of false alarms, it is important to distinguish between persons and four-legged animals. This paper proposes using enhanced summary autocorrelation patterns for feature extraction from seismic sensors, a multi-stage exemplar selection framework to learn acoustic classifier, and temporal patterns from ultrasonic sensors. We compare the results using decision fusion with Gaussian Mixture Model classifiers and feature fusion with Support Vector Machines. From experimental results, we show that our proposed methods improve the robustness of the system [4].

In recent years, there have been increase in the number of requests based on Radio Frequency Identification (RFID) organizations and have been successfully useful to different areas as diverse as conveyance, health-care, agriculture, and welcome industry to name a few. RFID technology facilitates automatic wireless identification using electronic passive and active tags with suitable readers. In this project, an attempt is made to solve recurrent attendance

monitoring problem in developing countries using RFID technology [5].

IV. BLOCK DIAGRAM OF SYSTEM

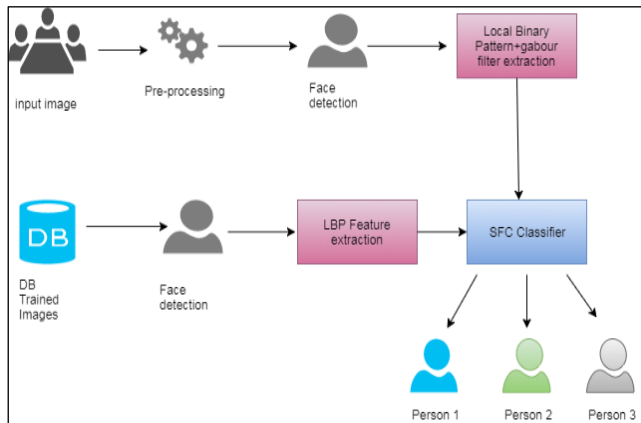


Fig. 4.1: Block diagram of system

In traditional way of involves a typical situation of students sitting in a classroom and the teacher calling out the names of the students individually to mark their attendance. The attendance is usually marked using hard resources - pen and paper. The huge attendance records that maintained are then used for later references.

V. APPLICATION

- 1) System is useful to extract visually sensitive features that play an important role in the process of humans perceiving image content.
- 2) System can deal with Content authentication.
- 3) Feature extraction is a main step in all perceptual image hashing.
- 4) Schemes in which robust features will lead to better results in perceptual.

VI. CONCLUSION AND FUTURE SCOPE

Thus, we focus on developing an automated attendance system It saves time and effort, especially if it is a lecture with huge number of students. This attendance system shows the use of facial recognition technique for the purpose of student attendance and for the further process this record of student can be used in exam related issues. It is not possible to identify faces having similar facial features. The system can be extended to respond to the presence of newcomers in the classrooms. Also, means to mark attendance without the intervention of teachers in a classroom i.e. automatically marking attendance at the beginning of every hour can be implemented.

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