

Smart Attendance Recording System using Image Processing

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Abstract: Attendance recording in educational institutions is an effective task. In most of the educational institute provide database administration but still the system is based on manual data handling procedures. In this paper, we forth put a system that takes the attendance in the classroom when lecture is going on. Our system automatically recognizes the faces and takes the attendance. We propose a method for evaluating the attendance exactly using all the results of face recognition obtained by continuous observation. Continuous observation improves the performance for the estimation of the attendance we constructed the student attendance system based on face recognition, and applied the system to classroom lecture. Face will register first and then detected in the image template and finally recognize. If face is detected it find the student ID and then marks the attendance.

Keywords: Attendance, detection, feature extraction, image conversion, face recognition.

I. INTRODUCTION

The attendance is one of the most important and most complex components in an independent energy system. Attendance system need for a more efficient and imperative method of solving this difficulty. Now a day attendance system is based on the paper work. But now days organisation start the attendance system for staff based on finger print. This system has limited record storing capability and more complex maintains the record. Another is iris attendance system which is also costly and not affordable to small organisation that's why we decide to developed new a new system which cost wise benefit and affordable to every organisation. In our project CCTV is use to take input object and then process on object for and face detection and identification. If Object has existence then our system identifies it and gets the student id of student and searches same in our register database system. If Id found then get the record of student and mark the attendance as present with present date and time. Our system is fast and easy to maintenance. Our system is centralized system which is connected by CCTV and capture the face which more effective and provide tight supervision and make our system more efficient than other system.

II. LITERATURE REVIEW

Cctv surveillance mostly use for security in the world. This cctv surveillance extensive survey of object tracking methods and also gives a brief review of related topics. Object tracking methods are three categories based on the use of object representations by methods establishing point correspondence. A detailed of object trackers, including discussion on the object representation, relating motion, and the schemes estimating parameter student by the tracking algorithms is provided. this method is time consuming and not set the proper attendance. The second method is thumb print recognition. Disadvantage of thumb print recognition is that it can make mistakes with the dryness in winter or dirt of the finger skin [4]. Another way of taking attendance is iris recognition. The disadvantage of this method is that it is also complex and a lot of memory is required for data storage and cost. There are various methods for facial recognition like segmentation method. Various extensions have made to the segmentation method such face features. This method combines facial metrics with the parameter representation. Another method similar to the boundary technique is which uses linear analysis .this method for facial recognition is less sensitive to variation in lighting and pose of the face than using segmentation. Boundary utilise labelled data to retain more of the class specific information during the dimension reduction stage .a further alternative is the active appearance model[5].

III. PROPOSED WORK

In our system image comes in the Face Detection and Recognition modules and then the attendance is marked in the database. In this project we follow following step to process

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A. Feature Plan

In this process first the skin is classified and then only skin pixels remains and all other pixels in the image are set to black, this greatly enhance the accuracy of face detection process. It not only retains some of the variations in the image data

B. Register of Student Faces

First step in every biometric system is the enrolment of a person using general data like their name and their unique biometric features as templates. These unique features are then stored in the face database with student ID.

C. Registered Students

In this method, we estimate classroom and looks down at the student area vertically.

D. Object Recognition and get Roll No and Marking Attendance

After extracting the features from the given face image, a recognizer is needed to recognize the face image from the stored database. This is called the selection of region of interest. In this way faces of students are verified one by one with the face database using the face reorganisation method and attendance is marked in the database.

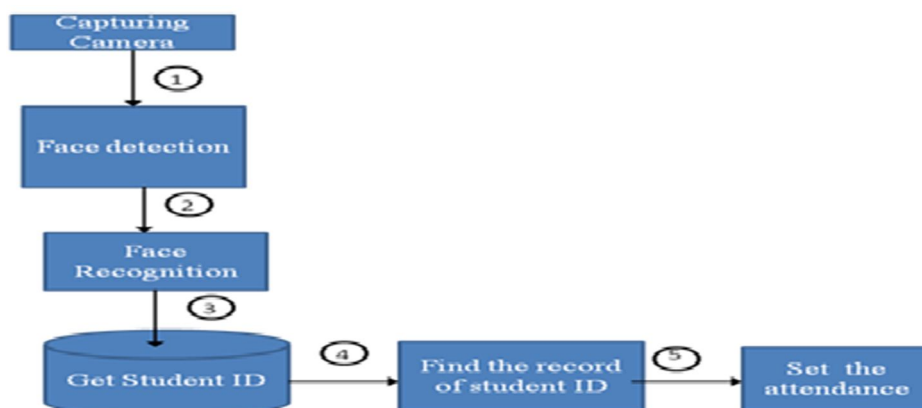


Fig. 1. Block Diagram of Attendance System

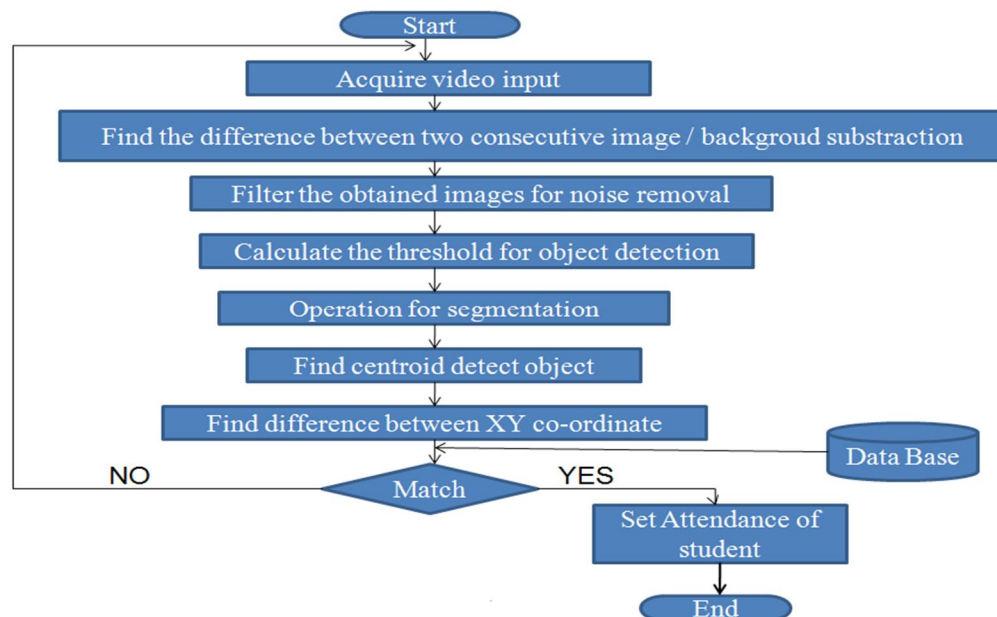


Fig. 2. Flow Chart

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IV. CONCLUSION

We have developed advance system for the attendance system in institutes, which is the CCTV, based attendance system using data logger and face detection. This attendance system can be applied in any organization to maintain smart record of attendance. This is possible by the new rising technology CCTV. Our system is fast and smart to take attendance with low cost and easy to maintain and provide report of attendance... It also provides an overall view with detailed discourse of the operation of the system. This system helps in taking attendance using face recognition using CCTV surveillance camera. Another application of this system is that it is capable of marking the presence of student at any workplace in college campus and this attendance will be useful for calculating their percentage of present of attendance in classroom.

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REFERENCES

- [1] "Ashal mathu and Ying chu," What are we Tracking: A object Tracking and Recognition", IEEE Transactions on Image Processing, Vol.24, No.3, pp. 549-560."
- [2] "Ashlesha Gupta, Anjali V. Thakre, "Automated Camera Object Tracking System Template Matching", International Joint Conferences on Advances in Computer, Information, System Sciences and Engg. Sponsored by IEEE, Bridgeport, pp. 245-250."
- [3] "Yilmaz, O. Javed and M. Kesalkar, "Object Tracking: A Survey", ACM Comput. Surv. Vol.39, No.5, pp.1-13."
- [4] "Ismail Haritaoglu, David Harwood and Larry S. Davis, "A Real Time System for Detecting and Tracking People", IEEE Transaction on Vol. 23, No. 9, pp. 819-830."
- [5] "Anil kamble, Arun khandekar and Salil Prabhakar," An introduction to biometric recognition", , IEEE Transactions on Volume 18, Issue 1."
- [6] Sys closed circuit television book by JOE CIESZYNSAI third edition
- [7] Digital image processing by Rafael C. Gonzalez and Richard E. Woods third edition.