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Event Security Using Face Identification

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Abstract: ***One of the latest trends in event planning is incorporating facial recognition technology into the registration experience. Event planners and hosts have realized how convenient and efficient this method compares to traditional registration methods. The purpose of this system is to automate the existing manual system with the help of computerized equipment's fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easily available and easy to work with. Event management system, can lead to secure and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. The organization can maintain computerized records without redundant entries.***
Keywords: Login, Logout, Face recognition, Image processing, Camera

I. INTRODUCTION

In an era of heightened security concerns, event management has evolved to prioritize the safety and well-being of attendees. Traditional methods of ensuring security, such as physical barriers and manual checks, have their limitations and may not always guarantee the highest level of safety. As a response to these challenges, the integration of cutting-edge technology has become an essential component of event security. Face recognition involves two steps, first step involves the detection of faces and second step consist of identification of those detected face images with the existing database. There are number of face detection and recognition methods introduced. Face recognition works either in form of appearance based which covers the features of whole face or feature based which covers the geometric feature like eyes, nose, eye brows, and cheeks to recognize the face. Our system uses face recognition approach to reduce the flaws of existing system with the help of machine learning, it requires a good quality camera to capture the images of students. When using facial recognition technology, event organizers will keep uninvited or unexpected individuals from entering the space more efficiently. When a person tries to gain access or credentials to the event, the software will immediately recognize an attempted unauthorized entry and display an alert message on the system.

II. PROBLEM STATEMENT

The project idea is to develop a system that helps event organizers to manage events and verify identities of attendees in order to reduce human error.

III. OBJECTIVES

The main goal is to improve event security by putting in place a strong and trustworthy authentication system. A sophisticated way of identifying people is provided by facial recognition technology, which also lowers the possibility of unwanted access. Facial recognition technology expedites the check-in procedure, cutting down on wait times and doing away with the need for manual verification. This increases event management's overall effectiveness, facilitating more seamless operations. Lessening the need for paper work because computers manage and store all data instantly and can generate reports.

IV. MOTIVATION OF THE PROJECT

Traditional methods of event security, such as manual checks and physical barriers, are no longer sufficient to address the complexities of today's security landscape. In the traditional event management system, attendees typically undergo a manual check-in process where they present their tickets or identification documents to security personnel or event staff. This process is often time-consuming, especially for large-scale events with a high volume of attendees. Human error is inherent in manual processes. Security personnel may overlook inconsistencies or fail to accurately verify the identity of attendees, leading to potential security breaches or unauthorized access. With manual check-in systems, it can be challenging to track the movement of attendees within the event venue effectively. This lack of real-time monitoring could pose security risks or logistical challenges during emergencies.

The motivation for using face recognition in event management is to make the process faster, safer, and more convenient for both organizers and attendees. It replaces manual check-ins with a seamless, automated system, improving efficiency and security while providing a modern, hassle-free experience for everyone involved.

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V. SCOPE

Facial recognition can be applied to a wide range of events, including conferences, concerts, festivals, sporting events, trade shows, and exhibitions. The technology is versatile and adaptable to different event settings and requirements. Facial recognition can be deployed at various entry points within the event venue, including main entrances, VIP areas, exhibitor halls, and backstage areas. By implementing facial recognition at strategic locations, organizers can enhance security and control access effectively.

VI. LITERATURE SURVEY

Table 1. Survey of projects

Sr. No	Title of project/paper	Journal name and year	Key findings
1	Online Event Management System	International Journal of Scientific Research in Computer Science, Engineering and Information Technology Volume 7, Issue3 -Year - May-June-2021	The project is an Online Event Management System for college students, simplifying the process of organizing events.
2	Smart Attendance Management System Using Face Recognition	PK EAI Endorsed Transactions on Creative Technologies 10 2018, Volume 5, Issue 17, e4	The project automates attendance tracking for organizations using facial recognition.
3	Mobile Application for College Event Management	International Research Journal of Engineering and Technology, Volume:09 Issue: 12Dec 2022,	The project aims to develop a dynamic Android app for college events and club management.

VII. PROPOSED SYSTEM

Our system allows admin and participant to sign up. After sign up participant and admin can login using login id and password. After login participant is directed to participant module and admin is directed to admin module.

The diagrams show the relationships between these classes:

1) If participant don't have an account, he can do registration by filing his personal details.
2) An Admin can add, update, and delete Events.
3) A Gatekeeper is responsible for verifying the identity of Participants through facial recognition.
4) An Event can have many Participants.
5) A Participant can register for one or more Events.
6) A Participant can see all details of the event which includes venue, time, capacity, price, etc.
7) Admin can grant permissions to users according to their positions

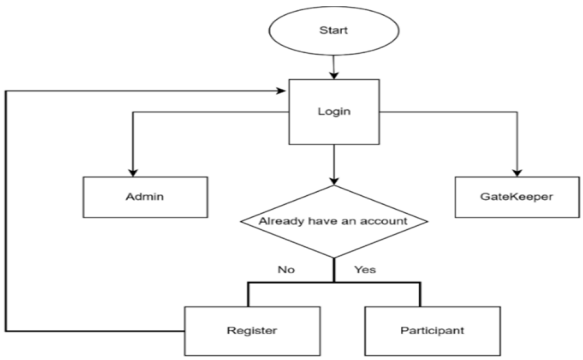


Figure 6.1 Login design

In above figure 6.1 Signup is done by participants, admin and gatekeeper. If participant already have an account, then he can login, otherwise registration is required. Once registered he can login.

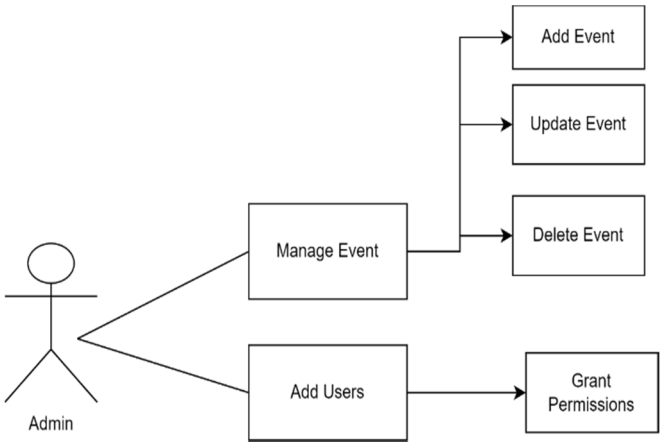


Figure 6.2 Admin module

The above figure 6.2 shows admin module options. These options are accessed by admin. The admin can add, update and delete events. He can add participants and gatekeeper. He can delete participant if in case the participant wants to delete his registration. He can also grant permissions to the users according to their positions.

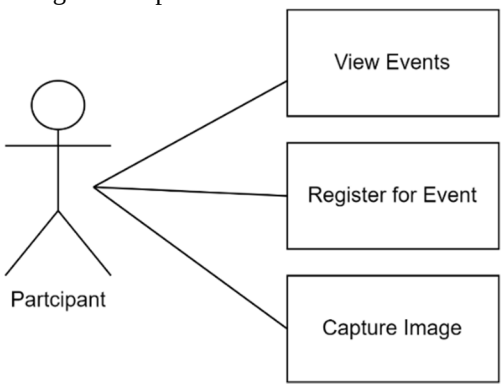


Figure 6.3 Participant module

The above figure 6.3 shows participant module options. These options are accessed by participant.

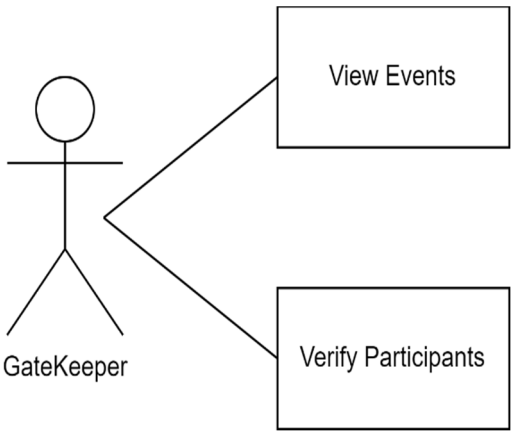


Figure 6.4 Gatekeeper module

The above figure 6.4 shows gatekeeper module options. These options are accessed by gatekeeper

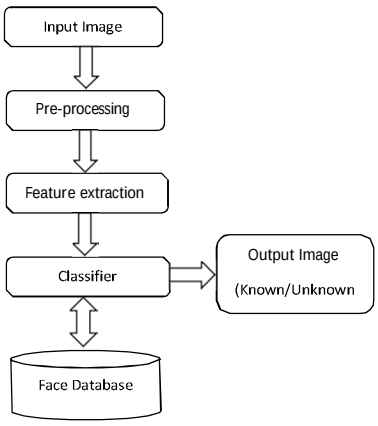


Figure 6.5 Block diagram

A. Database Creation

The first step is the creation of a database of faces that will be used. The images are then stored in the database along with the unique id.

B. Training of Faces

The images are saved in gray scale after being recorded by a camera.

C. Face Detection

The data of the trained faces is stored in .py format

D. Face Recognition

The data of the trained faces are stored and the detected faces are compared to the IDs and recognized.

VIII. ACKNOWLEDGMENT

We sincerely wish to thank our project guide Prof. Hanumant Pawar for his encouraging and inspiring guidance that helped us to make our project a success. Our project guide made sure we were on track at all times with his expert guidance, kind advice, and timely motivation which helped us determine our project. We also express our deepest thanks to our HOD Dr. Shraddha Phansalkar whose benevolence helped us by making the computer facilities available to us for our project in our laboratory and making it a true success. Without her kind and keen co-operation, our project would have been stifled to a standstill. Lastly, we would like to thank our college principal for providing lab facilities and permitting us to go on with our project. We would also like to thank our colleagues who helped us directly or indirectly during our project.

IX. CONCLUSION

We have prepared new system after identifying issues in existing manual system. When security and safety issues are in the news every day, live events must be safe and secure for those that attend. Ultimately event attendee safety is more important for the planner and those attending. So, most will choose security over cost. Thus, we will implement Event security using face recognition to address the problem faced by event organizers with respect to security.

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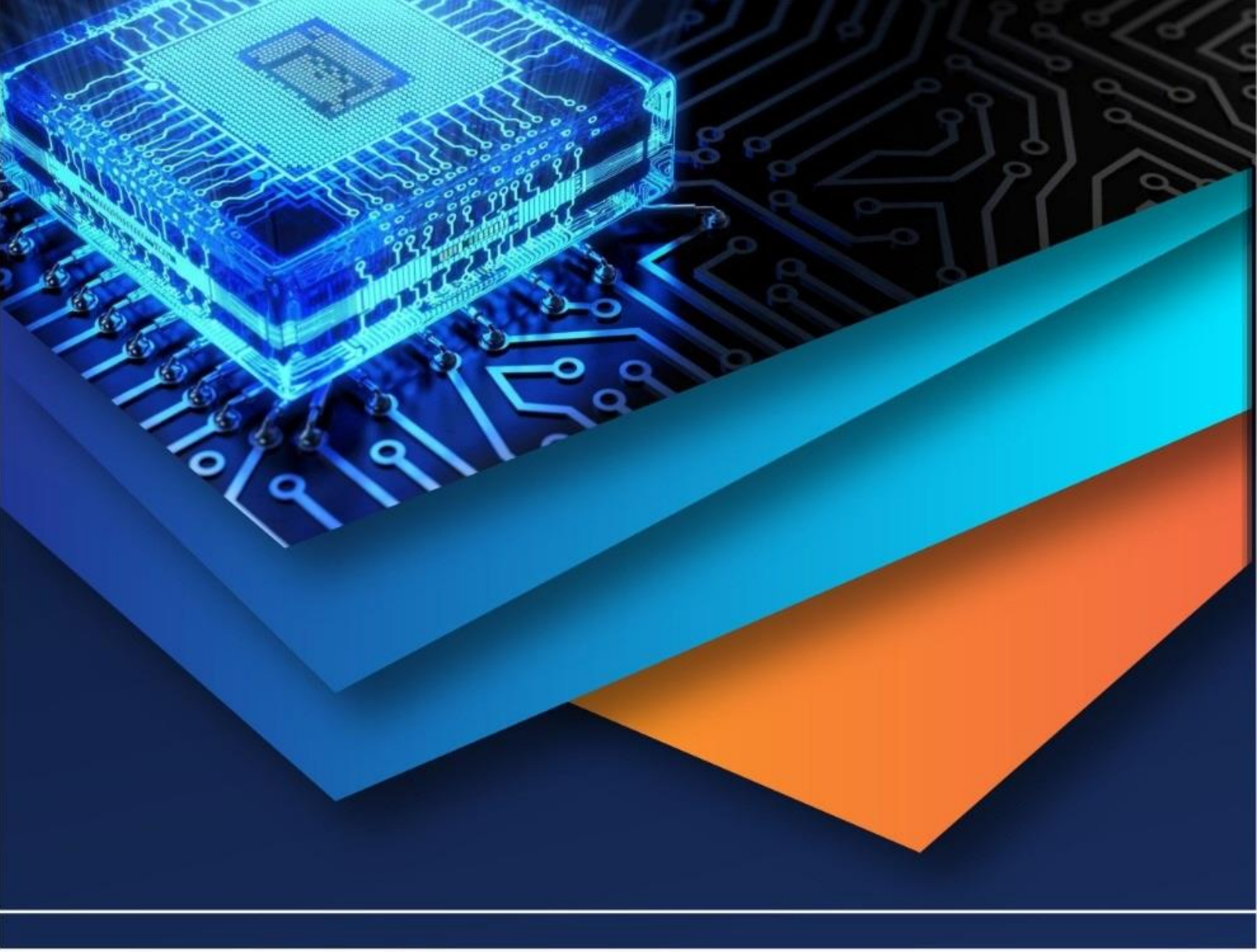
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