**SRI SIDDHARTHA INSTITUTE OF TECHNOLOGY**

**MARALURU, TUMAKURU-572103**

**(A Constituent college of Sri Siddhartha Academy of Higher Education, Deemed to be University)**

**DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING**



**Mini Project Report**

**On**

**“REAL-TIME FACE ATTENDANCE”**

Submitted in partial fulfillment of the requirement for the completion of the Vth semester of

**BACHELOR OF ENGINEERING**

**Submitted by:**

|  |  |
| --- | --- |
| RAMANA REDDY S | 20IS081 |
| RENATI DEEKSHITH REDDY | 20IS082 |

**Under the guidance of:**

Mr.GANGADHAR.M.L B.E,M.Tech,(Phd)

Assistant Professor

Dept. of ISE

**DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING**

**2022-23**

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**CERTIFICATE**

|  |  |
| --- | --- |
| **Signature of the Guide** | **Signature of the HOD** |
| Mr.GANGADHAR.M.L  Assistant Professor  Dept. of Information Science & Engg.  Sri Siddhartha Institute of Technology  Tumakuru - 572105 | Dr. Karunakara K  Professor & Head  Dept. of Information Science & Engg.  Sri Siddhartha Institute of Technology  Tumakuru - 572105 |
|  |  |

Certified that mini project work entitled “Real-Time Face Attendance”, is a bonafide work carried out by RAMANA REDDY S (20IS081) and RENATI DEEKSHITH REDDY (20IS082), in partial fullfillment of the requirement for the completion of Vth semester in Information Science and Engineering of Siddhartha Academy of Higher Education Tumakuru during the year 2022‑23.It is certified that all correction/suggestions indicated for internal Assessment have been incorporated in the report. The report has been approved as it satisfies the academic requirements with respect to Mini Project work.

**Name of the Examiners: Signature:**

**1.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DECLARATION**

We, **RAMANA REDDY S (20IS081)** and **RENATI DEEKSHITH REDDY (20IS082)** ofVth, Department of Information Science and Engineering of Sri Siddhartha Institute of Technology, Tumakuru, hereby declare that this Mini project titled, **“Real-Time Face Attendance”**, has been carried out by us under supervision of Mr.GANGADHAR.M.L, Assistant Professor, Department of Information Science and Engineering, Sri Siddhartha Institute of Technology, Tumakuru in partial fulfillment of the requirement for the completion of Vth semester inInformation Science and Engineering.

Date: RAMANA REDDY S (20IS081)

Place: Tumakuru RENATI DEEKSHITH REDDY (20IS082)

#### APPROVAL FOR SUBMISSION

I certify that this project report entitled **“REAL TIME FACE ATTENDANCE SYSTEM”** was prepared by  **RAMANA REDDY S** and **RENATI DEEKSHITH REDDY** has met the required standard for submission in partial fulfillment of the requirements for the award of Bachelor of Engineering \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Approved by,

Signature :

Supervisor :

Date :

**ABSTRACT**

The face is the representation of one’s identity. Hence, we have proposed an automated student attendance system based on face recognition. Face recognition system is very useful in life applications, especially in security control systems. The airport protection system uses face recognition to identify suspects and the FBI (Federal Bureau of Investigation) uses face recognition for criminal investigations. In our proposed approach, firstly, video framing is performed by activating the camera through a user-friendly interface. The face ROI is detected and segmented from the video frame by using the Viola-Jones algorithm. In the pre-processing stage, scaling of the size of images is performed if necessary to prevent loss of information. The median filtering is applied to remove noise followed by the conversion of color images to grayscale images. After that, contrast-limited adaptive histogram equalization (CLAHE) is implemented on images to enhance the contrast of images. In the face recognition stage, enhanced local binary pattern (LBP) and principal component analysis (PCA) are applied correspondingly to extract the features from facial images. In our proposed approach, the enhanced local binary pattern outperforms the original LBP by reducing the illumination effect and increasing the recognition rate. Next, the features extracted from the test images are compared with the features extracted from the training images. The facial images are then classified and recognized based on the best result obtained from the combination of algorithm, enhanced LBP, and PCA. Finally, the attendance of the recognized student will be marked and saved in the excel file. The student who is not registered will also be able to register on the spot and notification will be given if students sign in more than once. The average accuracy of recognition is 100 % for good-quality images, 94.12 % for low-quality images, and 95.76 % for the Yale face database when two images per person are trained.

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