

SYSTEM USING FACE RECOGNITION

PROJECT WORK

PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE AWARD OF THE
DEGREE OF BACHELOR OF TECHNOLOGY
IN INFORMATION TECHNOLOGY

OF THE ANNA UNIVERSITY

2021

ARUN I
1718105
RATHESH P
1718131
SANJAI M

1718134

Under the Guidance of **Prof. T. Suguna M.Tech.**,

DEPARTMENT OF INFORMATION TECHNOLOGY GOVERNMENT COLLEGE OF TECHNOLOGY

(An Autonomous Institution affiliated to Anna University)

COIMBATORE - 641 013

DEPARTMENT OF INFORMATION TECHNOLOGY GOVERNMENT COLLEGE OF TECHNOLOGY

(An Autonomous Institution affiliated to Anna University)

COIMBATORE - 641 013

PROJECT WORK

MARCH 2021

This is to certify that this project work entitled

ATTENDANCE MANAGEMENT SYSTEM USING FACE RECOGNITION

RECOGNITION is the bonafide record of project work done by ARUN I 1718105 RATHESH P 1718131 SANJAI M 017181346 of B.Tech. (Information Technology) during the year 2020 - 2021 **Project Guide** Head of the Department Prof. T. Suguna M.Tech., Dr. S.Rathi M.E., Ph.D Submitted for the Project Viva-Voce examination held on _____ **Internal Examiner External Examiner**

ACKNOWLEDGEMENT

Great achievements are not possible without standing on the shoulders of giants. Without the active involvement of the following experts this project would not have been a reality.

We express our sincere gratitude to **Dr.P.Thamarai M.E, Ph.D.,** Principal, Government College of Technology, Coimbatore for providing us all facilities that we needed for the completion of this project.

We whole-heartedly express our thankfulness and gratitude to **Dr.S.Rathi M.E., Ph.D.,** Associate Professor and Head of the Department of Information Technology, Government College of Technology, for helping us to successfully carry out this project.

Our thankfulness and gratitude to our respectable project guide **Prof.T.Suguna M.Tech.**, Assistant Professor, who has been of immense help through the various phases of the project. With her potent ideas and excellent guidance, we were able to comprehend the essential aspects involved.

We would like to thank our faculty advisor **Prof.R.Malavika M.Tech.**, Assistant Professor for her continuous support and encouragement throughout this project.

We extend our sincere thanks to the staff members of Information Technology department, **Prof.R.Devi M.Tech.**, Assistant Professor, **Prof.C.Aswini M.Tech.**, Assistant Professor **Prof.S.Gladson Oliver M.Tech.**, Assistant Professor, **Prof.M.Jeyanthi M.Tech.**, Assistant Professor, **Dr.M.Blessy Queen Mary M.E.,Ph.D.**, Assistant Professor, **Prof.M.Gowri Shankar M.E.**, Assistant Professor and other non teaching staffs for rendering their help for the completion of this project. We also thank all our friends for their cooperation and suggestions towards the successful completion of this project.

SYNOPSIS

Face recognition is a technology capable of matching a human face from a digital image or a video frame against a database of a face works by pinpointing and measuring facial features from a given image. Face recognition techniques authenticate users through id verification services. These techniques are used for identifying people in photos, video, or in real-time etc. System generates the attendance of the student on the basis of presence in class. In the existing attendance management system we have to mark attendance manually. The model detects the person by analyzing the image and provides the exact result after the extraction of the facial features. This technique ensures feasibility and provides a better solution for real time problems. The proposed method is based on capturing and detecting images using face recognition methodology called KNN classifier.

CONTENTS

CHAPTER NO	TITLE P BONAFIDE CERTIFICATE		PAGE NO	
			ii	
	ACKNOWLEDGEMENT SYNOPSIS			
				TABLE OF CONTENTS LIST OF FIGURES LIST OF ABBREVIATIONS
	ix			
	Х			
	1	INTRODUCTION		1-2
	1.1	DESCRIPTION	1	
	1.2	EXISTING SYSTEM	1	
	1.3	PROBLEM DEFINITION	2	
	1.4	PROPOSED SYSTEM	2	
	1.5	ORGANIZATION OF PROJECT	2	
2	LITER	ATURE REVIEW	3-7	
	2.1 AU	JTOMATIC ATTENDANCE MANAGEMENT SYSTI	ΞM 3	
	US	SING FACE DETECTION		
		2.1.1 DESCRIPTION		
		2.1.2 MERIT		
		2.1.3 DEMERIT		
	2.2 CL	ASS ATTENDANCE MANAGEMENT SYSTEM	4	
	US	SING FACE RECOGNITION		

2.2.1	DESCRIPTION			
2.2.2	MERIT			
2.2.3	DEMERIT			
2.3 AUTOMATED ATTENDANCE SYSTEM USING				
IMAGE PROCESSING				
2.3.1	DESCRIPTION			
2.3.2	MERIT			
2.3.3	DEMERIT			
	ME ATTENDANCE USING FACE	5		
2.4.1	DESCRIPTION			
2.4.2	MERIT			
2.4.3	DEMERIT			
2.5 REAL TIME SMART ATTENDANCE SYSTEM USING				
FACE RECOGNITION TECHNIQUES				
2.5.1	DESCRIPTION			
2.5.2	MERIT			
2.5.3	DEMERIT			
2.6 ATTENDA	ANCE MANAGEMENT SYSTEM USING FACE	6		
RECOGN	IITION			
2.6.1	DESCRIPTION			
2.6.2	MERIT			
2.6.3	DEMERIT			

	2.7 STUDENT ATTENDANCE SYSTEM USING	7
	FACE RECOGNITION	
	2.7.1 DESCRIPTION	
	2.7.2 MERIT	
	2.7.3 DEMERIT	
3	SYSTEM SPECIFICATION	8-9
	3.1 SYSTEM REQUIREMENTS	
	3.1.1 HARDWARE REQUIREMENT	8
	3.1.2 SOFTWARE REQUIREMENT	8
	3.2 SOFTWARE DESCRIPTION	8
	3.2.1 ABOUT PYTHON	8
	3.2.2 CHARACTERISTICS OF PYTHON	9
	3.2.3 ABOUT FLASK	9
	3.2.4 CHARACTERISTICS OF FLASK	9
4	PROJECT DESIGN	10-11
	4.1 DESCRIPTION OF ADMIN MODULE	10
	4.2 DESCRIPTION OF TEACHERS MODULE	11
5	IMPLEMENTATION AND RESULT	12-29
	5.1 IMPLEMENTATION	
	5.1.1 ADMIN – APP.PY	12
	5.1.1.1 PACKAGES	12
	5.1.1.2 AUTHENTICATION SYSTEM	13

5.2 SAI	MPLE OUTPUT	
5.2 5 / 11	5.2.1 TEST IMAGES	24
	5.1.3 ADMIN PANEL	25
	5.1.4 ADMIN DASHBOARD	25
	5.1.5 STUDENT ADDITION	26
	5.1.6 FACULTY LOGIN	26
	5.1.7 FACULTY DASHBOARD	26
	5.1.8 TAKE ATTENDANCE	27
	5.1.9 REPORT PANEL	28
	5.1.9 REPORT PANEL5.1.10 ATTENDANCE VIEW	28 28
	5.1.10 ATTENDANCE VIEW	28
CON	5.1.10 ATTENDANCE VIEW	28
	5.1.10 ATTENDANCE VIEW 5.1.11 REPORT VIEW	28 29
6.1	5.1.10 ATTENDANCE VIEW 5.1.11 REPORT VIEW CLUSION AND FUTURE WORK	28 29 30
6.1	5.1.10 ATTENDANCE VIEW 5.1.11 REPORT VIEW CLUSION AND FUTURE WORK CONCLUSION	28 29 30 30

LIST OF FIGURES

FIGURE NO	TITLE	PAGE NO
4.1.1	ADMIN PHASE	11
4.2.1	TEACHER'S PHASE	12
5.2.1	TEST IMAGES	27
5.2.2	ADMIN PANEL	28
5.2.3	ADMIN DASHBOARD	28
5.2.4	STUDENT ADDITION	29
5.2.5	FACULTY LOGIN	29
5.2.6	FACULTY DASHBOARD	30
5.2.7	TAKE ATTENDANCE	31
5.2.8	REPORT PANEL	32
5.2.9	ATTENDANCE VIEW	32
5.2.10	REPORT VIEW	33

LIST OF ABBREVIATIONS

CNN CONVOLUTIONAL NEURAL

NETWORK

KNN K-NEAREST NEIGHBOUR

LBP LOCAL BINARY PATTERN

LBPH LOCAL BINARY PATTERN

HISTOGRAM

PCA PRINCIPAL COMPONENT

ANALYSIS

SVM SUPPORT VECTOR MACHINE