

CHAPTER 1

INTRODUCTION

AUTOMATED ATTENDANCE SYSTEM THROUGH FACIAL RECOGNITION AND DETECTION IN MACHINE LEARNING

1.1 Problem Statement:

Traditional way of marking attendance 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. Nowadays, biometrics traits has become very popular in playing a vital role in security related aspects from lower to higher grade such as, attendance system, physical and digital data entry access, login control, passport, national identity card, border .

Biometric is a physiological or behavioral feature of an individual used to identity or verify his/her identity in an efficient manner. With regard to this existence and development of this research field, every manual system is taking an evolution converting into an automated digital world to reduce the manual errors and obtaining the work effortlessly..

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1.2 Objective:

1. The Automated Attendance System requires the administrator or the faculty to first store the data set of the students in the form of the photos.
2. The attendance is recorded by a camera and the photos of the student is compared by the photos in the data set.
3. After the comparison is done the attendance is stored in a excel sheet.
4. The administrator or the faculty have the authority to manually update the attendance.

1.3 Scope :

This includes

- ☐ Face recognition algorithms.
- ☐ Image processing using MATLAB.
- ☐ Use of MATLAB toolbox such as Image acquisition toolbox and computer vision toolbox.
- ☐ Accessing MS Excel spreadsheet in MATLAB using Spreadsheet Link EX

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1.4 Platform Specification:

Hardware requirements – A multicore processor of i5 or i7 series with at least 8gb of RAM ,Premium graphics cards GTX 980 or 980Ms would be the best for a laptop, and 1080s 1070s would be the best for the desktop setup.

Technology used - Python ,OpenCV, Machine learning ,Deep learning ,Tensor Flow

Tools & Software required - IDLE 's – Spyder ,Pycharm , Python3 , Anaconda environment