

## **CHAPTER I. INTRODUCTION**

### **1.1 Project Background**

Business organizations of all sizes use time and attendance systems to record when employees start and stop work within the department in which work is performed. In addition to tracking when employees are working, organizations also need to monitor when employees are not working. Vacation time, compensation time, Family and Medical Leave Act (FMLA) time, and out of office duties should be recorded. Some organizations also keep detailed records of attendance issues such as who is sick and who is arriving late. So far, absenteeism is done manually and traditionally where you have to sign the attendance column that has been provided as proof of attendance. In fact, many technologies that have been provided by commercial vendors are the use of fingerprint machines (Mulyawan, Irawan, & Brianorman, 2015). However, the institution will experience a significant cost burden by procuring the machine, not to mention the added maintenance costs. Based on this, this study offers a system capable of performing facial recognition and Indoor Positioning System (IPS) features to automatically locate the owner of a face.

Time and attendance systems provide many benefits to organizations. This allows the employer to have complete control over all the hours the employee works. This helps control labor costs by reducing overpayment, which is often the result of transcription errors, misinterpretations, and intentional errors.

Manual processes are also eliminated as well as the staff required to maintain them. It is often difficult to comply with labor regulations, but a time and attendance system is invaluable for ensuring compliance with labor regulations regarding proof of attendance.

Companies with a large number of employees may need to install multiple web timesheets to speed up the process of getting all employees in

or out quickly or to record activities in dispersed locations. In today's business world we all know one simple truth... "Time Is Money!" This website works to keep track of the amount of time needed to make it easier for the office to monitor employee hours.

## **1.2 Problem Statement**

In this era, attendance is done manually and traditionally where you have to sign the attendance column that has been provided as proof of attendance. In fact, many technologies that have been provided by commercial vendors are the use of fingerprint machines (Mulyawan, Irawan, & Brianorman, 2015). However, the institution will experience a significant cost burden by procuring the machine, not to mention the added maintenance costs. With this system, employees write their name, arrival time and signature in the designated column in the notebook. This data is used to process the employee's salary given taking into account the time they are late and absent. The problem with this system is that employees tend to falsify entries and indirectly.

Given these problems, the authors created a facial recognition system for employee attendance using the CNN method. Convolutional Neural Network (CNN) is a machine learning method from the development of Multi-Layer Perceptron (MLP) which is designed to process two-dimensional data. CNN is included in the type of Deep Neural Network because of its deep network level and is widely implemented in image data.

## **1.3 Objectives**

The aims of this project are:

- Developing a face recognition system for attendance.
- Set camera with accurate face detection with location system.
- To generate monthly employee attendance reports.

## **1.4 Scopes Of The Project**

### 1.4.1 User Scopes

#### A. System Admin

- Admin can register new employee data.
- Admin can change office location settings.
- Admin can edit and delete employee data.
- Admin can monitor employee attendance.
- Admin can print employee attendance reports.

#### B. Employee

- Employees can edit profiles.
- Employees can make attendance.
- Employees can view attendance data.

### 1.4.2 System Scopes

- 1) Can detect employee faces.
- 2) Can record employee attendance time.
- 3) Can make reports on employee attendance management records.
- 4) Can add, edit and delete employee data.

## **1.5 Significance Of Project**

In this project, the importance of this research includes:

- a) A website-based application capable of detecting faces on employees to facilitate the attendance process.
- b) A website-based application that can record time attendance when faces and locations are detected.
- c) A website-based application capable of providing employee attendance management record reports.

## **1.6 Assumption and Limitation**

### 1.6.1 Assumption

With this system, it is hoped that it will make it easier for companies to process employee attendance. This system also improves employee productivity as it frees some staff from the time-consuming task of entering each employee's daily hours into the payroll program. That's because this system will generate an employee attendance report which makes it easier for the admin to calculate employee working hours.

### 1.6.2 Limitation

- 1) The host must connect to the internet.
- 2) If the place is quite dark there is no way the camera can detect faces.