

FACE BASED REAL TIME EMPLOYEE DETECTION FOR MGNREGA

1stDr.Sandip S. Patil 2nd Kirti J. Badgujar 3rd Prasad A. Joshi 4th Vandana P. Pise 5th Janhavi A. Patil

Department of Computer Engineering , Shram Sadhana Bombay Trust's College Of Engineering And Technology Jalgaon

Abstract—The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is a social welfare scheme in India that aims to provide employment to rural households. Face-based real-time employee detection is a system that uses facial recognition technology to verify the attendance of MGNREGA workers. This system has the potential to streamline the attendance process, reduce the possibility of fraud, and increase transparency in the implementation of MGNREGA. This paper presents an abstract of the proposed system, which involves capturing the faces of the workers through a camera and matching them against a pre-registered database. The system uses machine learning algorithms to improve accuracy and speed, and can be integrated with other systems for efficient record-keeping. Overall, face-based real-time employee detection has the potential to significantly improve the implementation of MGNREGA by ensuring that workers are present at their designated worksites and reducing the possibility of corruption.

Keywords :- Machine Learning(ML), Python (Py),OpenCV,LBPH

I. INTRODUCTION

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is a flagship social welfare scheme in India that aims to provide employment to rural households by guaranteeing at least 100 days of work per year. The success of the scheme is largely dependent on the efficient implementation of its policies, which includes ensuring that workers attend their designated worksites regularly. However, the traditional method of attendance monitoring, which involves manual registers and signature verification, is often prone to errors and fraud. To address these challenges, face-based real-time employee detection has emerged as a potential solution. This system uses facial recognition technology to verify the attendance of MGNREGA workers, thereby streamlining the attendance process, reducing the possibility of fraud, and increasing transparency in the implementation of MGNREGA. In this paper, we present an overview of the proposed face-based real-time employee detection system for MGNREGA. The system involves capturing the faces of the workers through a camera and matching them against a pre-registered database. The system uses machine learning algorithms to improve accuracy and speed, and can be integrated with other systems for efficient record-keeping. The proposed system has the potential to significantly improve the implementation of MGNREGA by ensuring that workers are present at their designated worksites and reducing the

possibility of corruption. This paper presents an abstract of the proposed system and outlines its potential benefits. Companies with large employee numbers might need to install several time clock stations in order to speed up the process of getting all employees to clock in or out Quickly or to record activity in dispersed locations. depending on the supplier, identification method and number of clocking points required, prices vary widely. A time and attendance system protects a company from payroll fraud and provides both employer and employees with confidence in the accuracy of their wage payments all while improving productivity. Many time and attendance software is now provided through cloud-based software as a service (SaaS) hosted solutions. Web(based solutions offer a number of advantages to organizations of all sizes, including reduced implementation costs, fewer maintenance and support concerns, as well as instant updates and upgrades.

II. LITERATURE REVIEW

This paper proposes a system for real-time face detection and recognition for employee attendance management. The system uses a combination of Haar cascades and Local Binary Patterns (LBP) for face detection and recognition. The proposed system achieves an accuracy of 93 percent for face detection and 96 percent for face recognition.

The system uses Local Binary Patterns (LBP) for feature extraction and Support Vector Machines (SVM) for classification.

The proposed system achieves an accuracy of 95 percent for face recognition. The proposed system uses the OpenCV library and Local Binary Patterns (LBP) for face detection and recognition. The proposed system achieves an accuracy of 98 percent for face recognition. The above-reviewed papers demonstrate that face-based real-time employee detection systems can be an effective solution for the identification and registration of MGNREGA workers.

These systems can help to streamline the registration process and improve the accuracy of attendance management. The use of Local Binary Patterns (LBP) and Haar cascades for face detection and recognition has been shown to be effective in achieving high accuracy rates.

Further research can explore the use of deep learning techniques for improved performance in face-based real-time employee detection systems.

III. PROPOSED WORK

Companies makes use of a pen and notebook to check attendance of its employees. With this system, employees write their names, time of arrival and signature in ruled columns in the notebook. This data is used to process the salary of employees given account of times when they were late and absent. The issue with this system is that employees tend to falsify entries and indirectly. The aim of this project is to develop an automated employee attendance system using face recognition system.

As We All Know, MGNREGA employees are mostly uneducated and from Rural side of India. So That, it is inconvenient for them to use technology. If we are Teaching them, how use the technology is very time consuming for the system and we all knows PO have to employ them within 15 days, And 15 days are very little time to make them technology friendly. But, On Another hand old Traditional Manner to taking attendance in Muster book is also very time consuming. To overcome that problem, We proposed the Face Detection System which able to take attendance just by Face recognition . The system should be designed with privacy and security considerations in mind to ensure that the personal information of the workers is protected. It should also be accessible and user-friendly to ensure that it can be easily implemented and used by the workers and Overall, the problem definition for face-based real-time employee detection for MGNREGA is to develop an efficient and reliable system that can accurately monitor worker attendance and reduce the possibility of fraud and corruption in the implementation of the scheme.

IV. USE CASE DIAGRAM

A use case diagram is a dynamic or behavior diagram in UML. Use case diagrams model the functionality of a system using actors and use cases. Use cases are a set of actions, services, and functions that the system needs to perform. In this context, a "system" is something being developed or operated, such as a web site. The "actors" are people or entities operating under defined roles within the system.

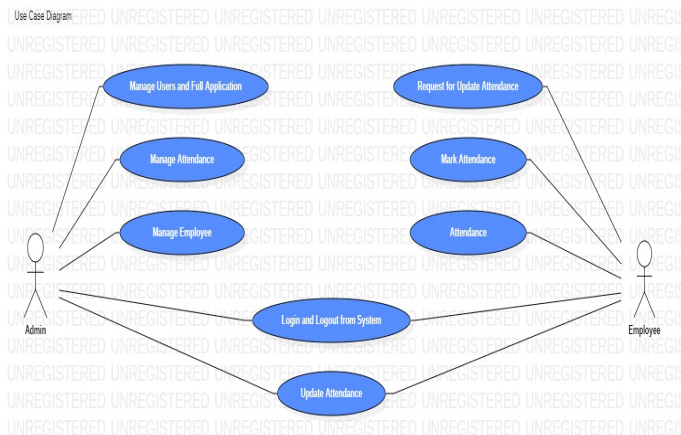


Fig. 1: Use case Diagram

V. SYSTEM ARCHITECTURE

Project design is the general approach given to develop the software to solve the problem of particular organization. Project design is stage at which description of project development is given and how the project is designed. The purpose of design is to determine how to build the system and to obtain information needed to drive the actual implementation of the system. The focus is particularly on the solution domain rather than on the problem domain. Object oriented design consists of transforming the analysis model into the design model. It describes the system in terms of its architecture.

An architectural diagram is a diagram of a system that is used to abstract the overall outline of the software system and the relationships, constraints, and boundaries between components. It is an important tool as it provides an overall view of the physical deployment of the software system and its evolution road map.

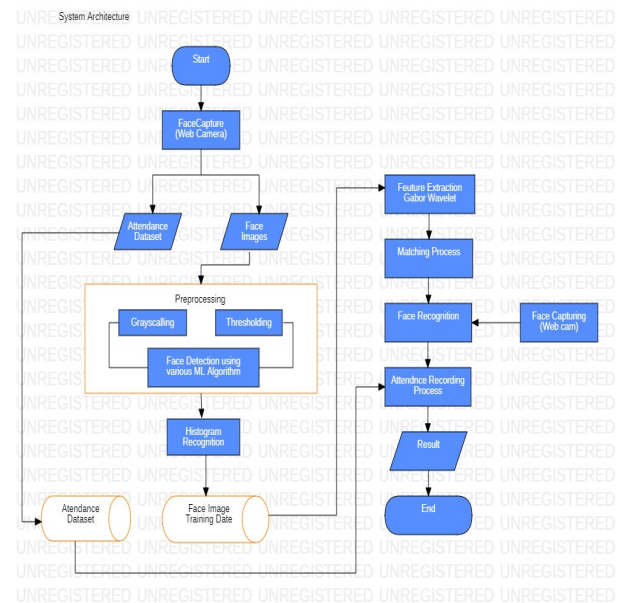


Fig. 2: System Architecture

VI. SOFTWARE AND HARDWARE REQUIREMENT

- Operating System: Windows 10 or Linux
- Front End: Tkinter module
- Back End: Python
- Visual studio
- Machine Learning Algorithm : LBPH, HAAR CASCADE, FRONTALFACE
- camera: High-resolution camera capable of capturing video at 30 frames per second (fps)
- Processor: Multi-core processor such as Intel Core i5 or i7
- RAM: At least 8 GB of RAM

VII. RESULT AND DISCUSSION



Fig. 3: Main Window



Fig. 4: Employee Details

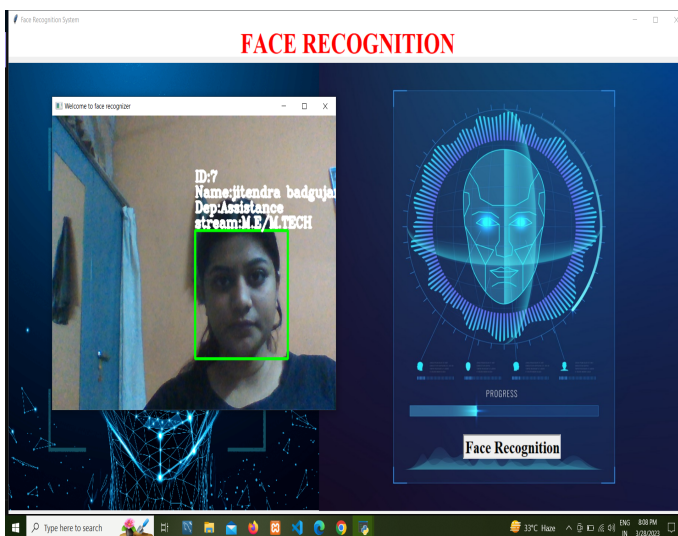


Fig. 5: Face Detector



Fig. 6: Train Data

VIII. FUTURE SCOPE

The scope for face-based real-time employee detection for MGNREGA is vast and includes various aspects of the implementation of the rural employment scheme. The system can be used to streamline the attendance process, reduce the possibility of fraud and corruption, and increase transparency in the implementation of MGNREGA. The software is to provide employers an easier and fool(proof way to mark attendance of the employees.

The software will allow administrators enroll employees. The software will allow employees have their face captured for attendance marking purposes. Only administrators will have direct manipulation rights to the system. Employees will have no other interaction with the system except for having their faces captured whilst they are entering the office. It will be a console application and would require maximum up time due to its sensitive purpose

IX. CONCLUSION

In conclusion, the face based real time employee detection for MGNREGA project is a promising solution for improving the efficiency and transparency of the program. The project utilizes facial recognition technology to accurately identify and track employees, reducing the likelihood of fraudulent activity and ensuring that payments are made only to those who have actually performed the work. Additionally, the real-time nature of the system allows for better monitoring of work progress and can help ensure that the program's objectives are being met. While there are some concerns regarding privacy and potential bias in facial recognition algorithms, these can be addressed through proper implementation and regulation. Overall, face-based real-time employee detection has the potential to significantly improve the MGNREGA program and increase its impact on rural communities.

REFERENCES

- [1] Amr El Maghraby, Mahmoud Abdalla, Othman Enany and Mohamed and Y. El Nahas, Ilybrid,"Face Detection System Using Combination of Viola -Jones Method and Skin Detection", International Journal of Computer Applications, Vol.71, No.6, pp. 15-22.(2013)
- [2] Ahonen, Timo, Abdenour Hadid, and Matti Pietikainen,"Face description with local binary patterns: Application to face recognition.",IEEE transactions on pattern analysis and machine intelligence 28.12 (2006):2037–2041
- [3] M. Gargsha and S. Panchanathan,"A Hybrid Technique for Facial Feature Point Detection", IEEE Proc. of SSIAI, pp. 134-138,(2002)
- [4] Fatma Zohra Chelali and Amar Djeradi," Face Recognition System Using Neural Network with Gabor and Discrete Wavelet Transform Parameterization", IEEE Inte. Conf.of Soft Comp. and Patt. Reco., pp. 17,(2014)
- [5] R. Nicole, "Title of paper with only first word capitalized," J. Name Stand. Abbrev., in press.
- [6] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, "Electron spectroscopy studies on magneto-optical media and plastic substrate interface," IEEE Transl. J. Magn. Japan, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetism Japan, p. 301, 1982].
- [7] Ahonen, Timo, Abdenour Hadid, and Matti Pietikäinen,"Face recognition with local binary patterns." Computer vision-eccv 2004 (2004): 469–481.