Smart Attendance System using Facial Recognition

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Abstract: *The most important part of classroom management is taking attendance of the students. Hence, maintaining the attendance record with day-to-day activities is a challenging task. The traditional method of calling name of each student is time-consuming and there is always a chance of proxy, prone to errors, such as incorrect entries or manual calculation mistakes. The daily attendance of students is a recorded subject wise which is stored by the administrator. Our system helps to take attendance by detecting the persons face and matching it with the ones stored in the database. Our proposed system can be implemented in any field where an attendance system is present and thus, plays a vital role. In this project, the Open CV python library along with LBPH and Haar Cascade algorithm has been used for face recognition approach. This model integrates an external camera that captures an input image, and an algorithm for detecting faces from an input image, marking the attendance in a spreadsheet which gets updated in the web application. The training database is created by training the system with the faces of the authorized students. The cropped images are then stored as a database with respective labels. The features are extracted using the LBPH algorithm. Our proposed system will help in saving time and will efficiently identify and eliminate the chances of proxy attendance. In addition, it's greatest to say this project is an engineering solution for all universities and colleges to track and manage attendance.*

Keywords: Open CV, LBPH, Haar Cascade

REFERENCES

[1] S. Dev and T. Patnaik, "Student Attendance System using Face Recognition," 2020 International Conference on Smart Electronics and Communication (ICOSEC), Trichy, India, 2020, pp. 90-96.

[2] A. Arjun Raj, M. Shoheb, K. Arvind and K. S. Chethan," Face Recognition Based Smart Attendance System," 2020 International Conference on Intelligent Engineering and Management (ICIEM), London, UK, 2020, pp. 354-357.

[3] K. Preethi and S. Vodithala, "Automated Smart Attendance System Using Face Recognition," 2021 5th International Conference on Intelligent Computing and Control Systems (ICICCS), Madurai, India, 2021, pp. 1552-1555.

[4] R. Azhaguraj, P. A. Kumar, S. Kadalarasan, K. Karthick and G. Shunmugalakshmi, "Smart Attendance Marking System using Face Recognition," 2022 6th International Conference on Trends in Electronics and Informatics (ICOEI), Tirunelveli, India, 2022, pp. 1784-1789.

[5] K. Sanath, M. K, M. Rajan, V. Balamurugan and M. E. Harikumar, "RFID and Face Recognition based Smart Attendance System," 2021 5th International Conference on Computing Methodologies and Communication (ICCMC), Erode, India, 2021, pp. 492-499.

6] A. Al-sabaeei, H. Al-khateeb, A. Al-basser, H. Al-Sameai, M. Alshameri and M. Derhem, "Smart Attendance System Based On Face RecognitionTechniques," 2021 1st International Conference on Emerging Smart Technologies and Applications (eSmarTA), Sana'a, Yemen, 2021, pp. 1-6.

[7] S. Sawhney, K. Kacker, S. Jain, S. N. Singh and R. Garg, "Real-Time Smart Attendance System using Face Recognition Techniques," 2019 9th International Conference on Cloud Computing, Data Science and Engineering (Confluence), Noida, India, 2019, pp. 522-525.

[8] I. Rajput et al., "Attendance Management System using Facial Recognition," 2022 3rd International Conference on Intelligent Engineering and Management (ICIEM), London, United Kingdom, 2022, pp. 797-801.

[9] V. M., D. R. and P. B. S.,"Group Face Recognition Smart Attendance System Using Convolution Neural Network," 2022 International Conference on Wireless Communications Signal Processing and Networking (WiSPNET), Chennai, India, 2022, pp. 89-93.

[10] S. S. Pawaskar and A. M. Chavan,"Face Recognition based Class Management and Attendance System," 2020 IEEE Bombay Section Signature Conference (IBSSC), Mumbai, India, 2020, pp. 180-185.