Smart Classrooms Redefined: A Practical Approach to Attendance with 'Attendance Genie'

Prof. Vikas Gaikwad[1], Vaishnavi Bilambe[2], Sanika Patil[3], Yashavant Patil[4], Diksha Waghale[5]

[1]Professor, Department of Artificial Intelligence & Data Science
[2*3*4*5]Student, Department of Artificial Intelligence & Data Science
Shree Ramchandra College of Engineering, Pune, India

Abstract: *Within the advancing scene of computerization and fake insights, facial acknowledgment innovation has risen as a promising elective to manual participation checking frameworks. This paper presents a web-integrated real-time confront acknowledgment participation framework competent of recognizing and distinguishing numerous people at the same time inside a single camera outline. The objective is to dispense with the wasteful aspects of roll calls and biometric frameworks by utilizing progressed confront discovery and acknowledgment strategies. The framework is created utilizing Jar (for the net interface), OpenCV (for real-time picture handling), face_recognition (for facial embeddings and comparison), and is upgraded by a YOLO-inspired engineering to guarantee quick and exact multi-face localization. The framework is totally offline, requires negligible equipment, and utilizes a webcam, making it perfect for instructive organizing and little organizations. The captured confront information is put away safely, and participation is checked based on time approval limitations, avoiding repetitive passages. This inquiries about talks about the point-by-point framework pipeline, plan design, modules included, and real-time effectiveness, concluding with its down to earth viability and confinements.*

Keywords: Real-Time Face Recognition, Multi-face Detection, YOLO, Flask, OpenCV, Attendance Automation, SQLite, dlib, HOG-CNN, Computer Vision, Embedded Systems, Edge AI

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