

# DESIGNING WORK ATTENDANCE SYSTEM USING IOT-BASED FACE RECOGNITION TECHNOLOGY

**Adi Fauzi Rozali**

*Electrical Engineering Study Program, Faculty of Science and Technology  
University of Technology Yogyakarta  
Jl. Ringroad Utara Jombor, Sleman, Yogyakarta  
E-mail: [adialiida@gmail.com](mailto:adialiida@gmail.com)*

## ABSTRACT

The advancement of Internet of Things (IoT) technology has driven innovation in automating workplace attendance systems. This study presents the design of a face recognition-based attendance system utilizing the ESP32-CAM module for image capture and a Python Flask server for data processing. Facial images captured by the ESP32-CAM are transmitted via Wi-Fi to a local server, where they are analyzed using an open-source face recognition library. Upon successful recognition, attendance data—consisting of name, date, time, and status—is automatically logged into an *Attendance.csv* file. Test results demonstrate that the system can recognize faces with an average accuracy of 92% under adequate lighting conditions, with response times ranging from 2 to 4 seconds. The system proves to be effective and easily deployable for small to medium-scale implementations. Its strengths lie in simple integration, the use of open-source libraries, and the capability to record attendance in real-time automatically. This solution offers an efficient and cost-effective approach to digitizing work attendance management.

**Keywords:** Automated Attendance, ESP32-CAM, Face Recognition, Python Flask, CSV