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Face Recognition-Based Attendance System: EaseAttend

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Abstract: *Traditional attendance methods, such as manual roll calls, RFID cards, and fingerprint scanners, are plagued by inefficiencies, inaccuracies, and hygiene concerns, particularly in the wake of global health crises like COVID-19. To overcome these limitations, this paper introduces* ***EaseAttend****, an innovative, contactless attendance management system that harnesses facial recognition technology for real-time tracking. Built using* ***Python****,* ***OpenCV****, and advanced deep learning techniques, EaseAttend captures video frames from a webcam, detects faces, and matches them against a pre-encoded database to log attendance securely. The system integrates a local* ***MySQL*** *database for immediate storage and syncs data with* ***Firebase Realtime Database*** *for cloud accessibility, ensuring robust data management. Additional features, such as a* ***PHP-based admin dashboard*** *for user management and reporting, and automated* ***FTP backups*** *for data security, enhance its practicality. By eliminating physical contact, EaseAttend reduces hygiene risks while addressing issues like proxy attendance and delayed logging. This makes it a scalable, efficient, and convenient solution for educational institutions, corporate offices, and beyond.*

Keywords: attendance

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