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ABSTRACT

This project focuses on creating a real-time attendance tracking system powered by advanced AI-based face recognition technology, aimed at automating the process of student attendance in educational institutions and eliminating the inefficiencies of manual roll calls. By leveraging live video feeds to capture and process face encodings, the system automatically updates attendance records in the Firebase database, ensuring accurate and seamless tracking. This approach not only saves time and reduces human errors but also enhances security by preventing attendance fraud, as it can distinguish between live faces and static images. Designed to be scalable, the system can be implemented in a variety of educational settings, ranging from small local schools to large universities, providing a consistent and efficient solution for managing attendance. The cloud-based architecture further enables institutions to access and manage records remotely, improving overall administrative efficiency. In contrast to outdated methods such as RFID cards or manual logbooks, this real-time face recognition system offers a more sophisticated and user-friendly experience, integrating modern technology with institutional needs for accurate record-keeping. Additionally, by storing student data in the cloud, institutions benefit from enhanced data security, easy retrieval, and effortless scalability, allowing the system to adapt to changing requirements. This smart, automated attendance system not only streamlines daily operations for teachers and administrators but also aligns with the growing trend of digitization and AI-driven solutions in education, offering a future-proof alternative to traditional attendance methods while fostering a more organized and accountable academic environment..