Secure Door Lock System Using AI and IoT

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Abstract: *In this project, we propose a smart door lock system that utilizes face recognition technology for secure access control. The system captures human images and compares them with stored images in a database to authenticate users. The primary objective is to enhance home security by implementing an AI-powered access control system using Python and the OpenCV library. Face recognition is widely used in security and law enforcement applications due to its ability to identify individuals in images, videos, or real-time environments. This paper discusses the development of an automated locking system integrated with a 12V solenoid electronic lock, leveraging ESP32-CAM and OpenCV to improve accuracy and effectiveness.*

Keywords: Python, OpenCV, Face Recognition, Security, Microsoft Visual Studio Code