

Anti-Theft Recognition using Raspberry Pi

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Abstract: *The Anti-Theft Face Recognition system using Raspberry Pi is a cost-effective and efficient security solution that combines facial recognition technology with the capabilities of the Raspberry Pi platform. This system aims to prevent unauthorized access and combat theft by utilizing a camera module to capture real-time images of individuals approaching a secured area. The captured images are then processed by a facial recognition algorithm, which compares them with a pre-registered database of authorized users. If a match is found, access is granted; otherwise, appropriate security measures can be implemented. The Raspberry Pi, a small-sized and low-power single-board computer, serves as the central processing unit for the system. Its GPIO pins enable the integration of a camera module for image capture. Open-source facial recognition algorithms, such as OpenCV, are utilized to perform the face identification and verification process. The system's key components include the Raspberry Pi board, camera module, facial recognition algorithm, database for storing pre-registered facial images, and a user interface for displaying captured images and system status. The system can be customized to suit various security scenarios, including access control in buildings, secure areas, or personal devices. The implementation of this system offers numerous advantages, such as affordability, flexibility, and scalability. The use of Raspberry Pi enables the integration of additional security features based on specific requirements. By leveraging the power of facial recognition technology and the accessibility of Raspberry Pi, the Anti-Theft Face Recognition system provides an innovative solution to enhance security systems and deter theft.*

Keywords: Security System, OpenCv, Raspberry Pi, Raspberry Pi Camera, Door Lock, Face Recognition

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