TITLE: **Design and Implementation of a Vision-Based Autonomous Robotic Suitcase for Real-Time User Tracking and Hands-Free Mobility in Dynamic Environments.**

ABSTRACT

This project presents the design and development of a modern smart suitcase integrated with a camera-based object tracking system and robotic mobility. The primary objective is to create a suitcase that autonomously follows its user without the need for manual handling. A high-resolution camera mounted on the suitcase captures real-time video, which is processed using computer vision algorithms to detect and track the user's movements.

The system leverages object-following techniques to continuously adjust the suitcase's direction and speed based on the user's position. The robotic platform, equipped with motors and sensors, ensures smooth navigation and obstacle avoidance. This intelligent luggage solution enhances user convenience, especially in travel scenarios like airports or train stations, by reducing physical strain and providing a hands-free experience.

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