



FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER ENGINEERING AND INFORMATICS

**CAR ACCESS CONTROL, ALERT AND SURVEILLANCE SECURITY SYSTEM
USING ESP32-CAM**

by

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ABSTRACT

Traditional car access control methods such as lock and key are not effective in stopping thieves from breaking in and stealing cars. So I developed a system known as car access control, surveillance and alert security system that uses a more advanced and secure method of access to cars.

The system uses facial recognition to recognize faces and when it recognizes the face of the owner, a servo motor opens the door of the car. However, when it does not recognize an individual as the owner of the car, the servo motor does not open the door of the car.

The system uses an ESP32-CAM for access control whereby the servo motor connected to the ESP32 board opens the door when the image of the individual captured matches the one stored in the database and does not open the door when there is no match.

If there is no match, the ESP32-CAM module captures images of the malicious individual and sends the images to the Telegram bot of the owner of the car.

DECLARATION

DECLARATION

I **OBBO ARTHUR** declare that the report being submitted has been written, compiled and analyzed by me without external assistance and it has never been submitted to a higher institution of learning in the country or abroad.

Signature:



Date:

13/06/2024

OBBO ARTHUR

APPROVAL

APPROVAL

This is to certify that the final year project report titled "Car access control, alert and surveillance security system using ESP32-CAM" has been done under my supervision and is now ready for examination.

Signature.....

J. Bwine

Date.....

26/11/2024

Dr. Matovu Davis.

Department of Computer Engineering and Informatics

DEDICATION

I dedicate this report to my dear family members especially my Father Mr. Okoth Obbo Simeon, my dear Mother Mrs. Adong Catherine, and the rest of the family for the material, physical, moral and spiritual support and encouragement that they provided.

I also dedicate it to every single individual who has been supportive during the course of my academic journey since without their guidance and direction I would not have reached where I am in my academic journey.

I would also like to dedicate this work to my supervisor Dr. Matovu Davis for providing me with guidance needed to develop the system.

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LIST OF ACRONYMS

1. ESP32:	Espressif System Platform 32
2. VSS:	Vehicle Security System
3. IOT:	Internet of Things
4. GPS:	Global Positioning System
5. SMS:	Short Message Service
6. ERD:	Entity Relationship Diagram
7. CV:	Computer Vision
8. Wifi:	Wireless Fidelity
9. FTDI programmer:	Future Technology Devices International programmer
10. IDE:	Integrated Development Environment

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