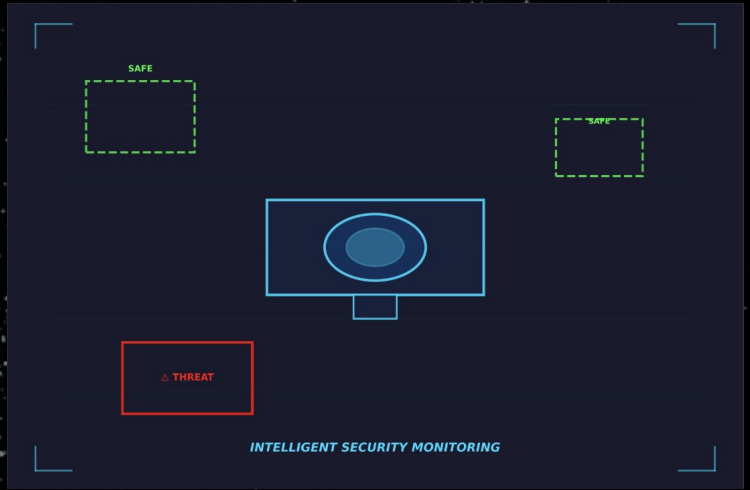
Security System

Intelligent Threat Detection for Homes and Businesses



Presented by Hovannes Baboudjian

Project Description

- Real time video monitoring with display
- Identifies objects detected using Yolo model
- Detects threats such as weapons and suspicious activity in the encapsulated parts of the camera feed
- Alarms the user any time a threat is detected

Target Audience:

- Homeowners and Business owners who are in the market for a threat detection camera

User's Point of View

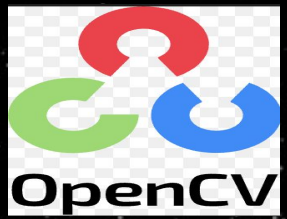
- User will mount the raspberry pi camera at any entry point
- User will connect the buzzer for alerts and upload phone number to receive security alerts
- The system will autonomously run once user starts the camera
- A green object outlining the perimeter of a captured object will mean it is safe
- A flashing red and white outlining the perimeter of a captured object will mean its a threat
- Buzzers will go off and text message will be received once a threat has been identified
- A Screenshot of the exact moment of threat will be captured as evidence

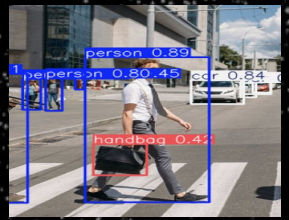
Why am I interested?

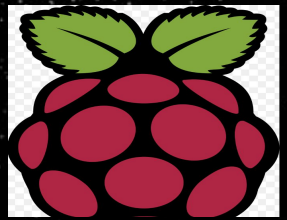
- Real World Impact: This Project can help people protect what's valuable to them
- Technical Challenge: Learning computer vision and optimizing Yolo AI models to run on Raspberry PI pushes me outside of my comfort zone
- Hardware and Software Integration: The combining of coding and configuring physical components to work together
- This project is appropriate for me because of my aspirations in working in defense, seeing the coming together of hardware and software, my strong Java background which will make it reasonable to finish in the length of the semester, and that I am ready to learn OpenCV library

Technologies

- Java: I have around 4 years of experience coding in Java
- OpenCV: This library is new to me however there is a lot of documentation and helpful sources online to help me learn how to implement it for my needs
- Yolo: This is new to me but will be used for object detection and classification
- Raspberry PI: I have some experience using Raspberry PI
- IntelliJ IDE: I have been using this IDE for a while now and have no problems with it







Questions?