**ABSTRACT**

In today's rapidly evolving technological landscape, smart home devices have become ubiquitous, offering convenience and efficiency in various aspects of everyday life. However, the proliferation of proprietary controls and centralized systems has posed significant challenges to interoperability and user experience. This project presents a solution to this problem by introducing an open-source framework for smart home connectivity. By eliminating reliance on proprietary software and embracing open standards, our project aims to create a seamless ecosystem where diverse smart devices can communicate and be controlled through a unified interface on users' smartphones.

**SMART CAMERA**

**Face Detection**

The FOMO CNN model (variation of MobileNet) where the downstream layers after a 1:8 area reduction are cut out and replaced with conv layers with custom loss.

**Hardware and Enclosure**

The OpenMV camera board, charge moderator board, and the battery pack all fit into a 3D printed enclosure measuring 58mm x 100mm for the base and is only 23mm deep.

**SMART LIGHT**

**Smart Lock**

**Smart Camera**

**SOFTWARE FLOW**

**Command Routing:** Manages all concurrent Bluetooth and WIFI connection states and routes commands to appropriate endpoint

**Audio Processing:** Converts audio commands to text and pushes relevant peripheral state updates to DB

**KEY COMPONENTS**

**Firebase Cloud**

Audio processing and command routing from app to central hub

**Android Application**

Easy to use UI makes the phone application easy to control their devices

**Central Hub**

Custom made PCB for audio processing, audio storage, and interfacing with the Firebase cloud

**FINAL PRODUCT**

Central Hub

Smart Light

Smart Lock

Smart Camera