

autoknoby

biometric security for physical controls

Mission

- Integrating physical control devices with state-of-the-art technology such as IoT and neural networks.
- Converting existing home appliances to smart devices using biometrics to accelerate the adoption of IoT.

Problem Statement

- Improve the safety of household appliances by preventing unauthorized access.
- Specific application:
 - Safety knob for stoves/ovens - Prevents use of dangerous kitchen appliances by children using facial recognition

Our Solution

- Webcam-based facial recognition to authenticate users for physical interactions with knob.
- Servo motor used to reset knob position and lock motion if altered by unauthorized users.

Technology

- Qualcomm Dragonboard 410c running Linux
- Face Detection - OpenCV
- Cloud-based facial recognition API
- 96Boards Sensor Mezzanine board

Future Applications

- Enable industrial control panels to prevent misuse.
- Connect kitchen appliances to web-based apps for automatic recipe execution.
- Using next generation Snapdragon chipsets, we can port the Neural Net from the cloud to on-board processing