TEAM 82

SMART HOME CONTROL GLASSES

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Introduction

Project Objective:

To make a comprehensive controller for smart home, that is able to control the different devices seamlessly with simple hand gestures.

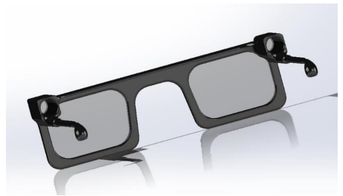
Specifications:

- WiFi Connection
- Camera Quality 1080p HD
- IP66 Duarbility
- Responce Time < 500ms
- Accuracy 80% for gesture recognition

Constraints:

- Lens width < 62mm & Frame bridge < 19mm
- weight of the frame < 300 grams
- Battery lasts 10 hours

Product form



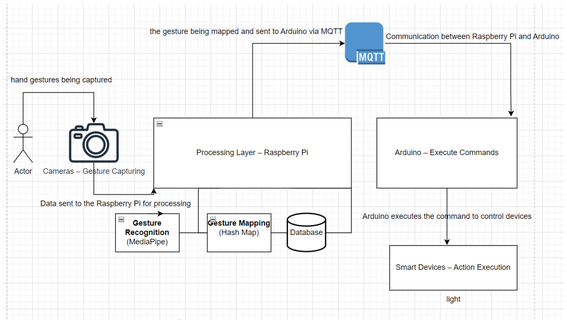
- Size: 184mm x 114mm x 89mm
- Weight 218g
- Includes two Oscilloscope Cameras

Elevator Pitch

Modern smart homes struggle with comprehensive, user-friendly control methods. For smart home individuals and families who need intuitive interaction with their homes, the Smart Home Control Glasses are lightweight eyewear that enables easy control for the house devices through simple hand gestures.

How it works

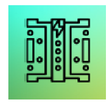
Data Flow:



Hand Mapping:

Gesture	Joint	Label Index
	Wrist	"0"
	Thumb	"4"
	Index	"8"
	Middle	"12"
	Ring	"16"
	Pinky	"20"

Deliverables

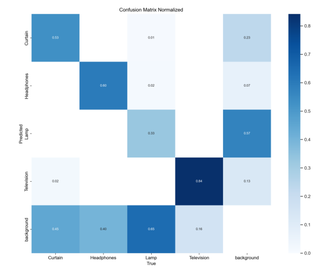


Working Prototype
Proof of Concept

Conclusion

- Prototype is able to Successfully distinguish between different household devices and gesture
- Devises are able to receive the command and act accordingly

Test



- 80% Precision
- Response < 90ms (Yolo11s)