

Whisperer – Smart Wearable for Sound Detecting

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Background

- **Global Challenge:** People around the world are experiencing different degree of hearing loss
- **Innovation Gap:** Existing solutions fail to provide spatial sound localization or critical alerts, compromising user safety.
- **The Solution:** A discreet textile-integrated wearable that converts environmental sounds into real-time directional haptic feedback using embedded AI



Objectives

Project System

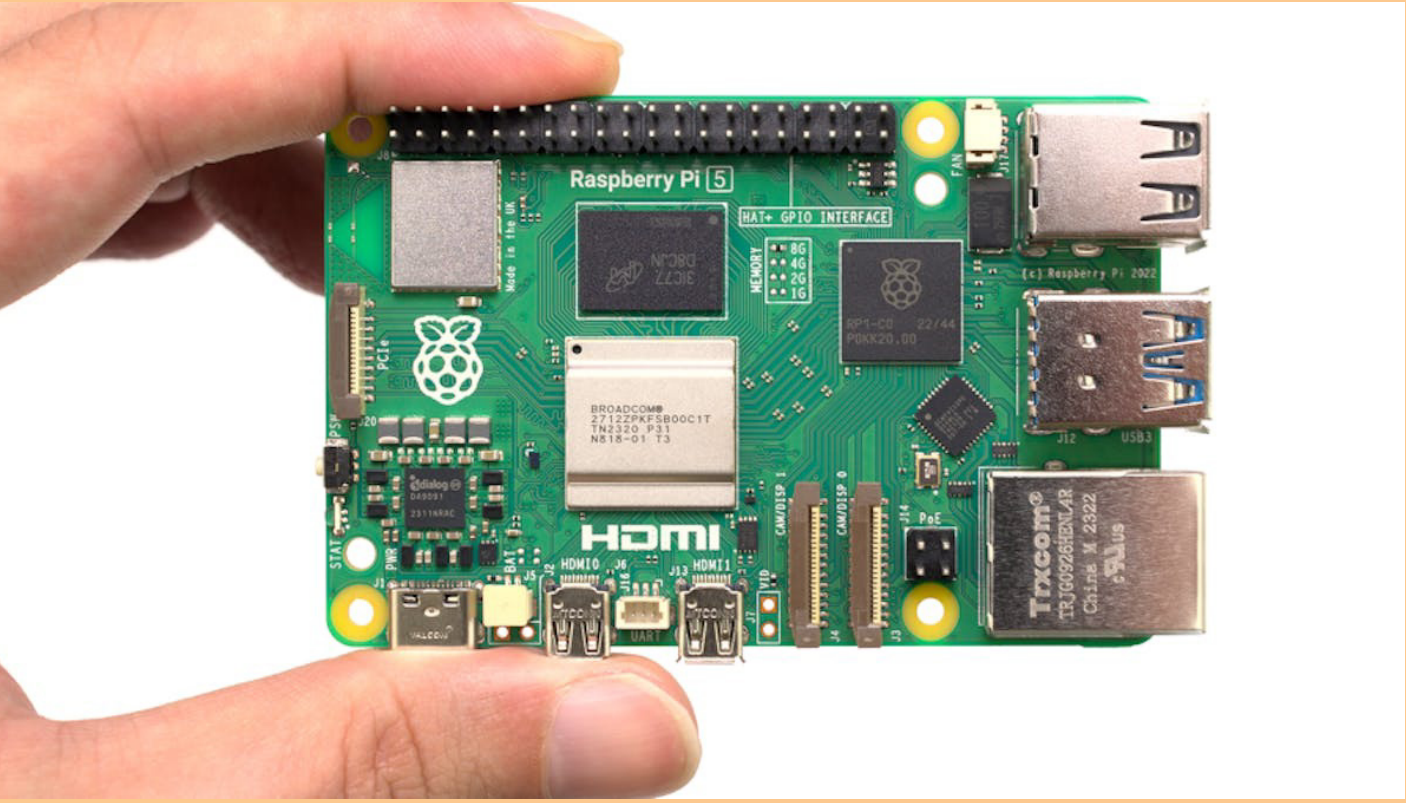


- All-day wearable comfort
- Customizable via mobile app



Methodology

Creating a smart wearable device:



Hardware
AI capable processor,
microphone array for
sound capturing, vibration
motors for haptic feedback

Validation metrics:



Latency



Accuracy

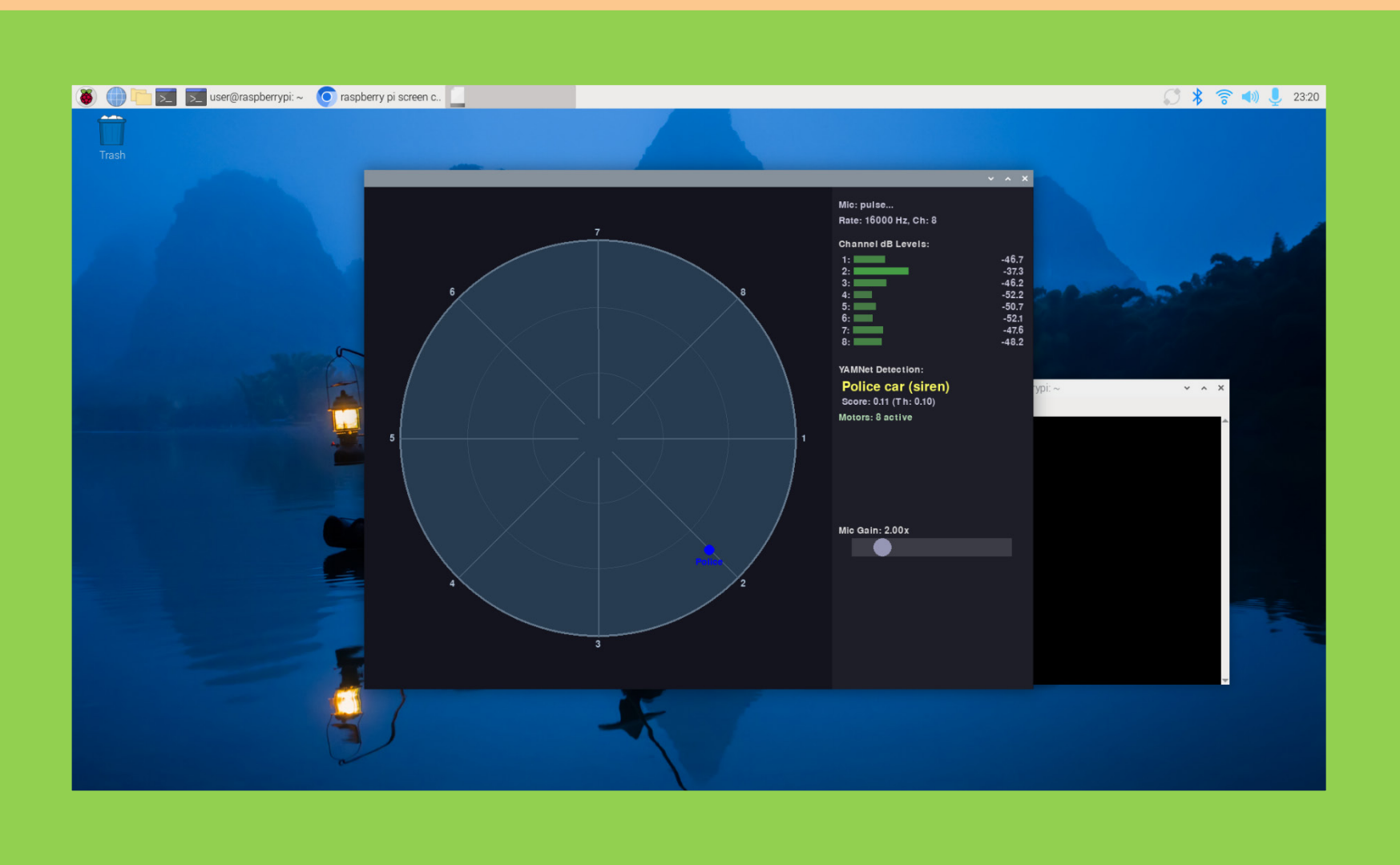


Comfort



Prototype video demo:

Findings



360 degree sound detection
and recognition with haptic
feedback

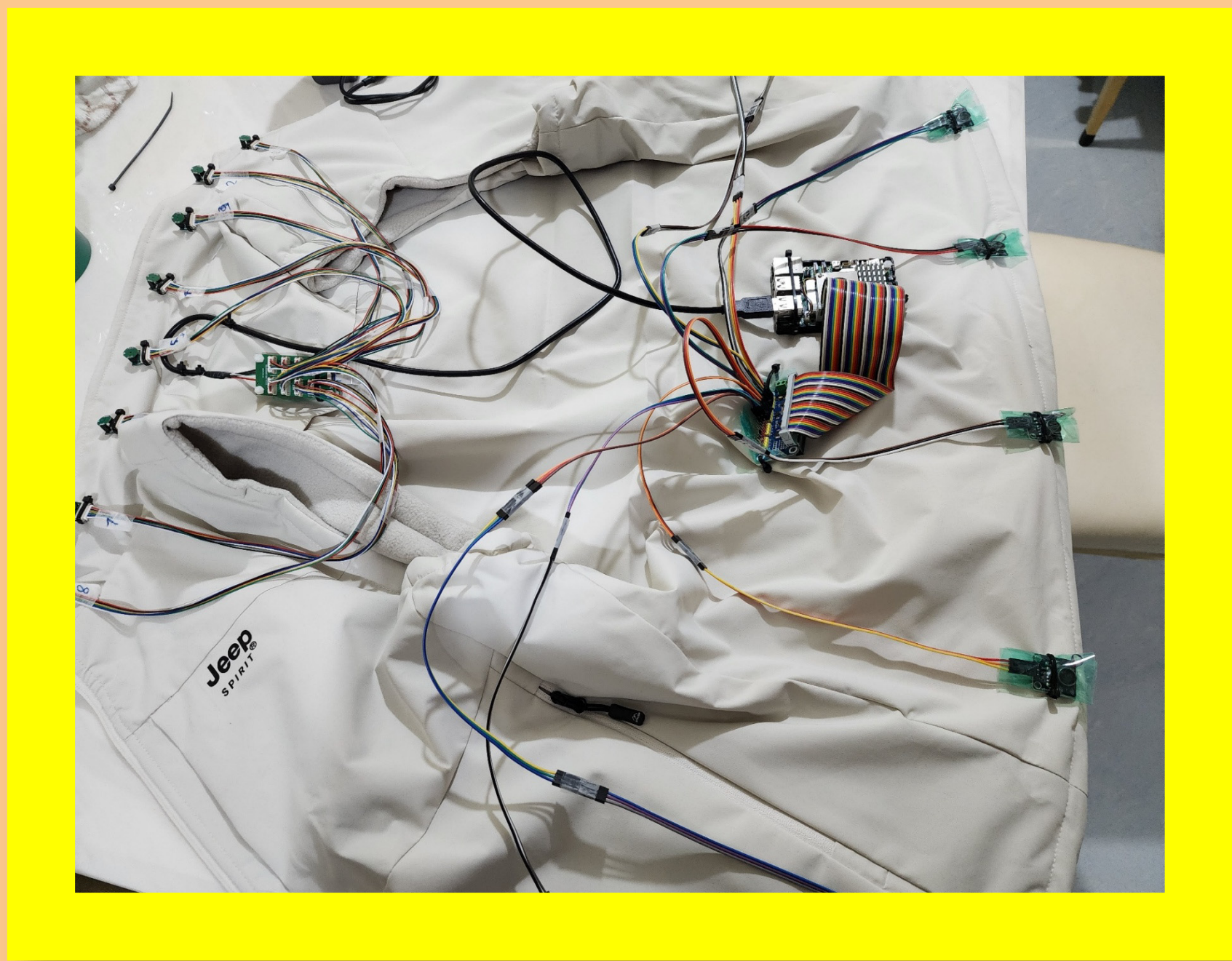
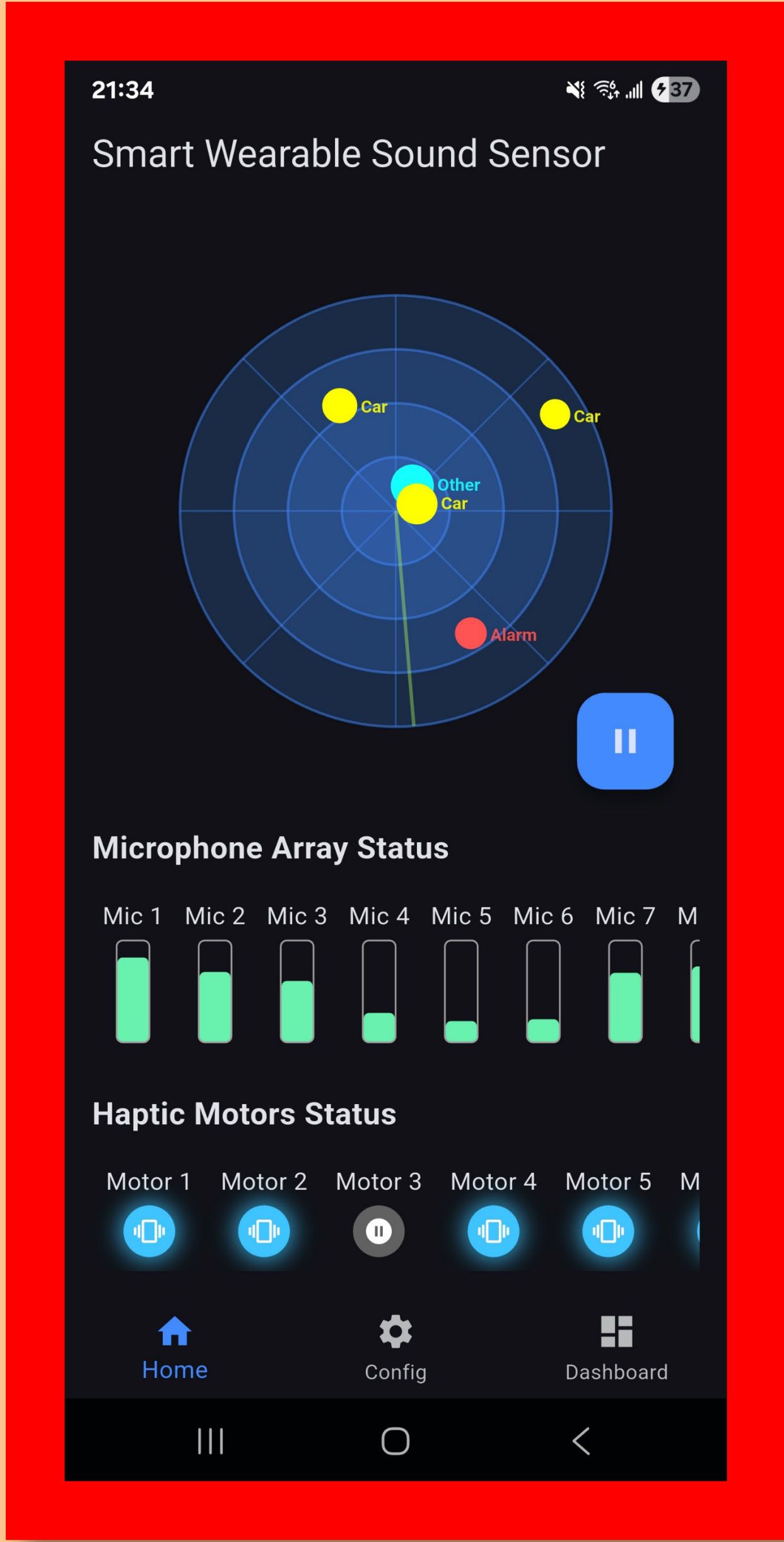


Image of the device



Application for the
smart wearable

Conclusion

Achieved:
Non-stigmatizing safety wearable for hearing-impaired
users

Positive social impact through:

- Improved sound awareness
- Enhanced personal safety
- Foster social inclusion
- Dignified, non-stigmatizing solution

