

Earea

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Tangible Interfaces workshop, The Academic College of Tel Aviv-Yaffo

The problem

Hearing impaired individuals have **difficulty noticing events** surrounding them. Not all tools that exist today fit everyone who is hard of hearing.

As a result they **feel helpless**, especially when alone, we want to assist these individuals.

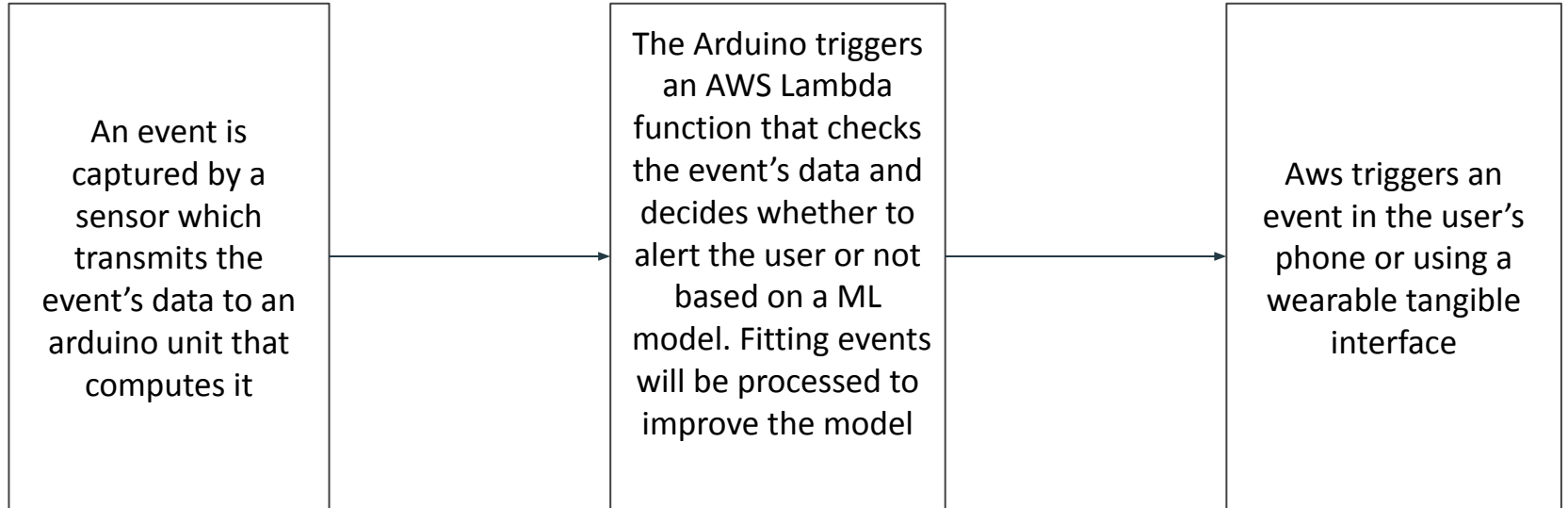
Our solution

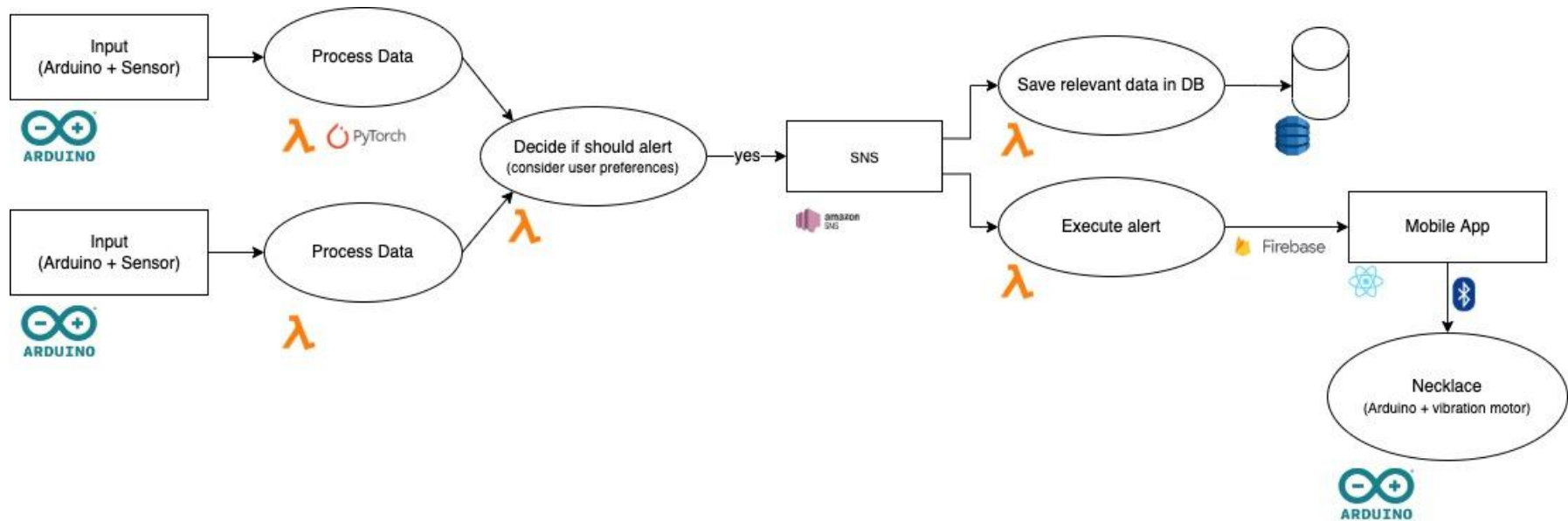
1. Develop and create a tool that helps people with hearing disabilities by **identifying different events and alerting them via vibrating necklace.**
2. **Optimizing the identification** of relevant events **through Machine Learning** techniques.
3. Using **mobile app** to allow users easy access to different settings, configures and rating alerts.

Oh! It's an Open Source

1. It's going to **belong to the community**
2. We design it to be:
 - Modular and Extendable
 - Easy to build and configure
 - Cheap to maintain
 - Clear structure to ease code contribution
3. Some of these features require further development, but don't worry - we are on it :)

System basic flow





System Architecture

What we used

Sensors and Arduino parts:

- Arduino Uno x3
- Arduino Nano 33 IoT
- Sound sensor
- Vibration sensor
- Volume sensor (or equivalent)

Softwares:

- AWS
- PyTorch
- React Native
- DynamoDB