Case Study: Wearable Health-Monitoring Wristband

ELSI SAT FOR IOT

Elisa Veloso and Adam Roque

Stakeholders

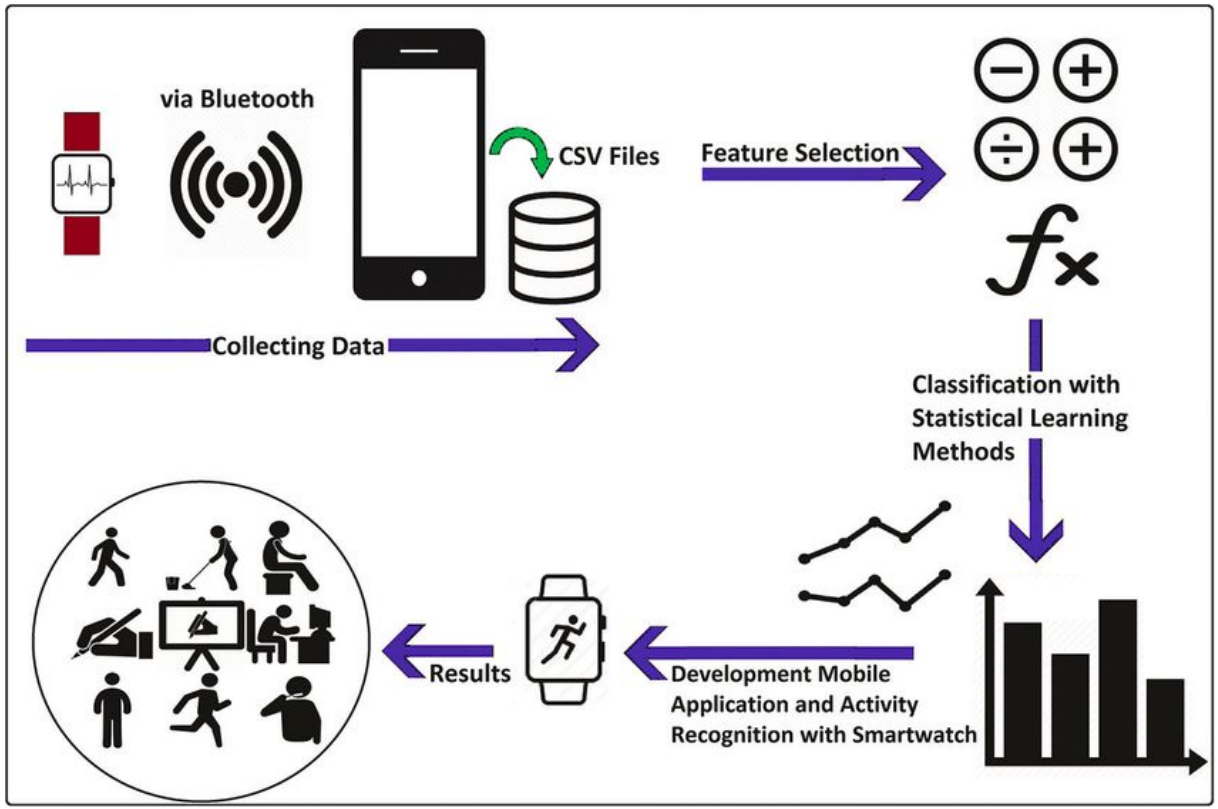
Primary Stakeholders :

- Consumers/users
- Health Startup
- Healthcare Providers
- Insurers
- Mobile App Developers
- Cloud Service Providers
- IoT Security Firms

Secondary Stakeholders:

- Employers
- Retailers / Distributors
- Privacy Advocates
- Legal Experts
- Government & Policy Makers

Data Flows


via Bluetooth
CSV Files
Feature Selection
Collecting Data
Classification with
Statistical Learning
Methods
Development Mobile
Application and Activity
Recognition with Smartwatch
Results

Ethical, Legal and Social aspects

- Ethical
  - The wristbands is always collecting the data of patient’s body, not only data for a specific purpose
  - Users usually don't know the third part researchers or insurers that access their data, even if the data is anonymized, and
  - The risks here are privacy violations and security breaches.
- Legal
  - Regarding data protection, special-category data is being collected and the user usually doesn’t know precisely how it is being used.
  - Depending on the country, there are different aspects to be covered on data protection laws
  - Since this wristband is a
  - The challenge here is to set the devices to collect and store data based on what is allowed in the country that it is being sold
- Social
  - Wristbands are usually expensive and the data collected usually belongs to a specific group.As a result, the data collected may reflect a limited segment of the population, leading to biased analytics and insights.
  - This lack of diversity in health data can reinforce inequalities in health research

References

Ballı, Serkan & Sağbaş, Ensar. (2017). The Usage of Statistical Learning Methods on Wearable Devices and a Case Study: Activity Recognition on Smartwatches. 10.5772/66213.

Lee, I., & Lee, K. (2015). "The Internet of Things (IoT): Applications, investments, and challenges for enterprises."