

AI-Mafia

Matlab 2023 Hackathon - Athens

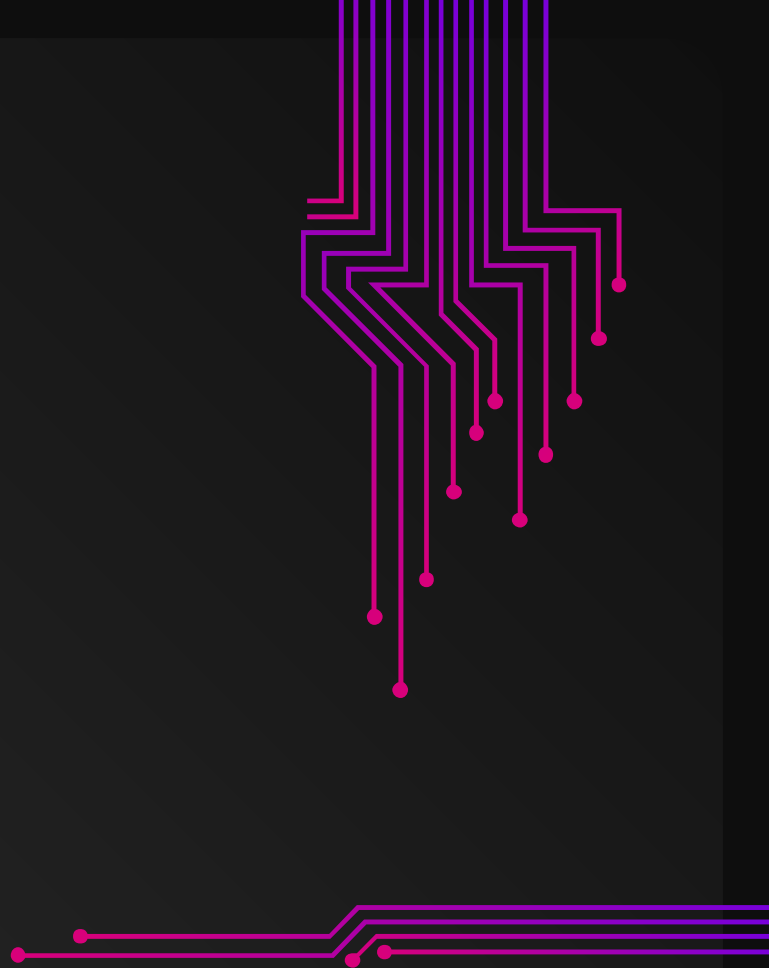
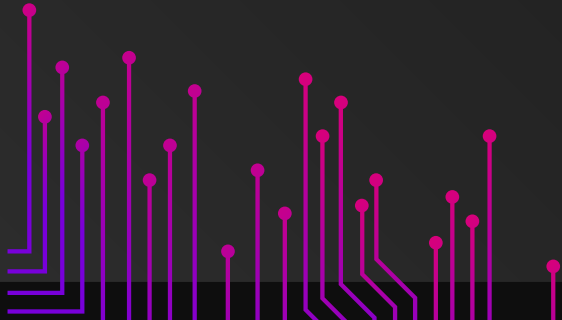


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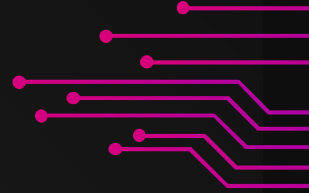
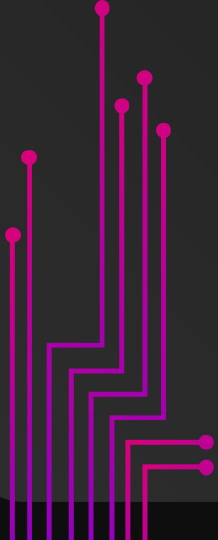
Sensor Data collection

02

Data processing

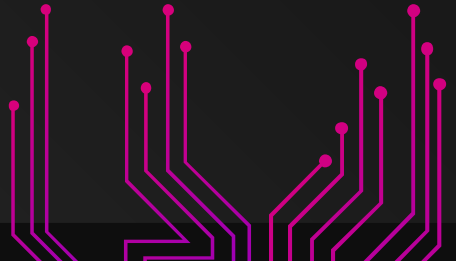
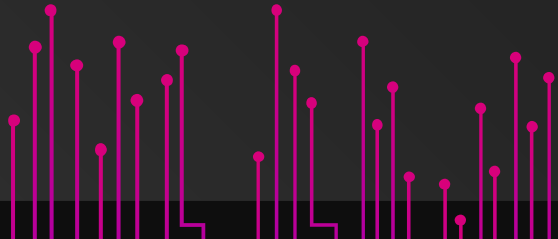
03

Results



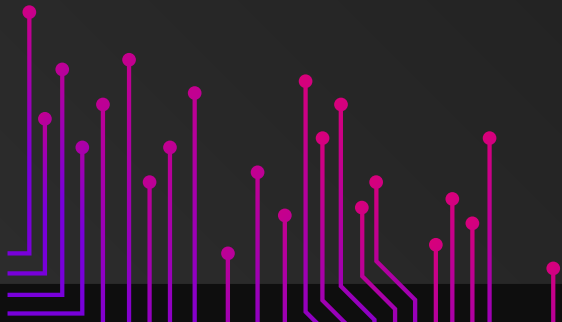
Introduction

Our app is a healthcare monitoring application. It gathers mobile phone sensor data for a person while exercising and classifies the type of exercise that was performed. Additionally, it provides additional insight regarding the person's vital metrics.

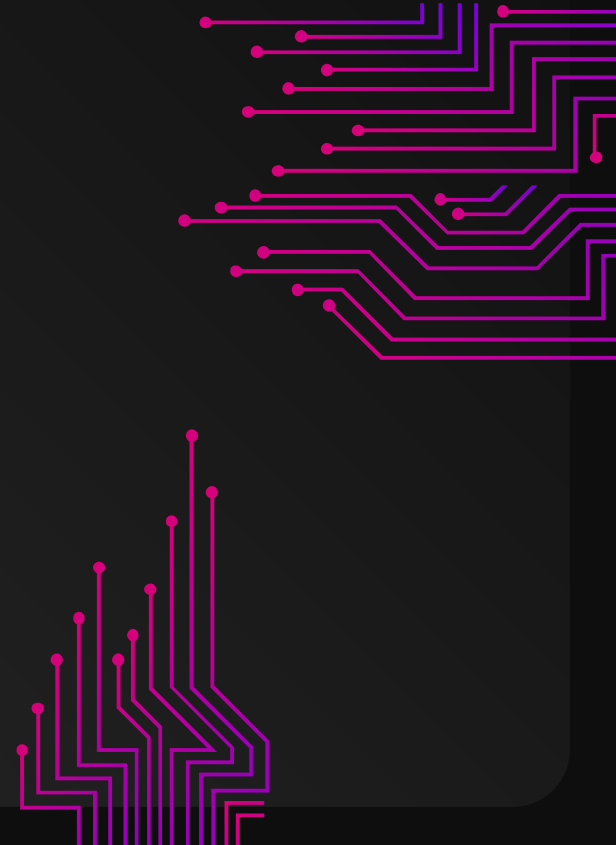


01

Data collection

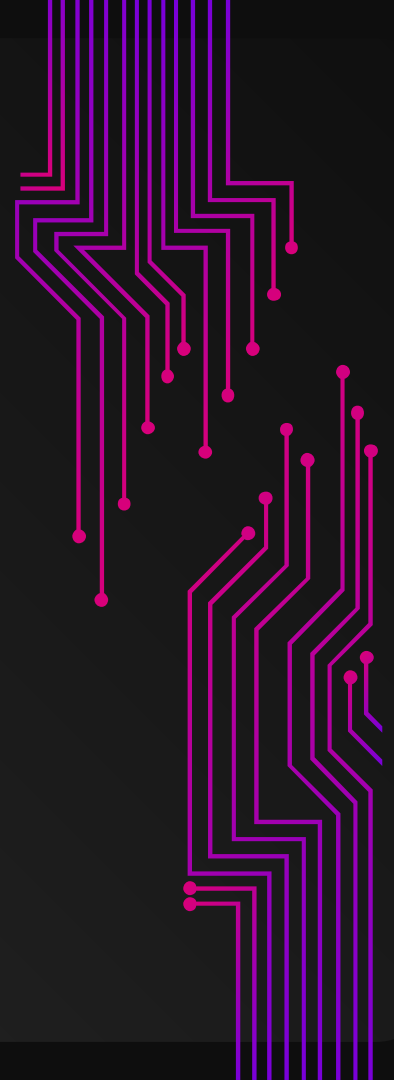
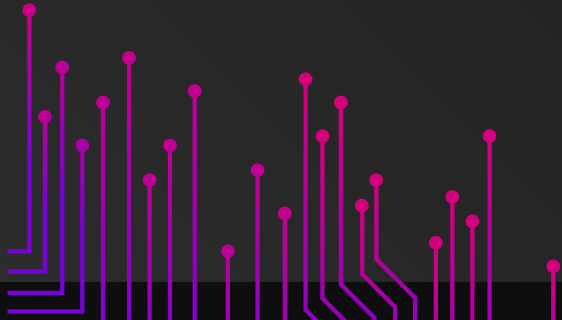


We created an app that gathers sensor data during a person's workout and shares them to our Matlab backend through an API as a csv file. The backend calculates the metrics that the user wants to see returns them to be visualized.



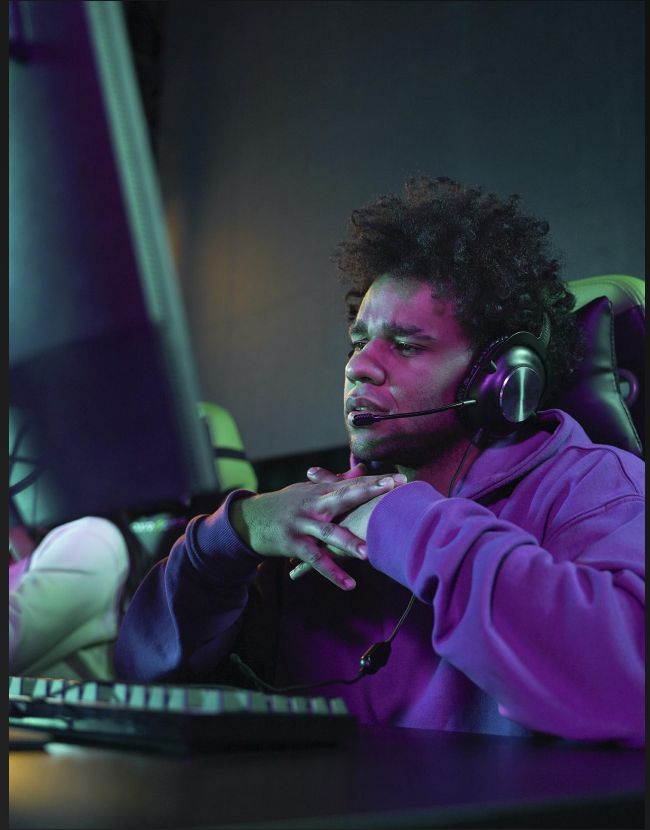
02

Data processing



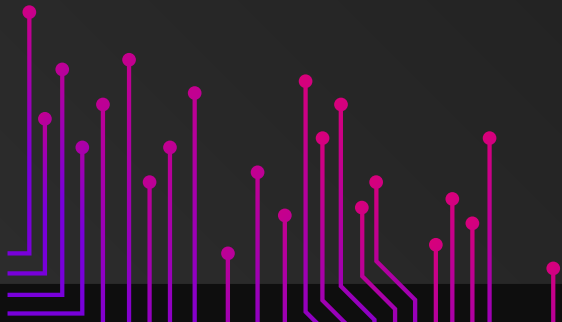
Data processing

The data is processed to create meaningful insight for the user's health and athletic performance. The results are interfaced to the user through the mobile app.



03

Result





Metrics

Step counter

Counts the steps during the workout

BMI



Calculated from data the user inputs

Fat free mass index

Static calculation of given info

Mean speed

Using data from the user's workout recording





ML models

Workout classifier

96% accuracy

Machine learning model
that classifies the user's
recorded activity as:

- Running
- Standing
- Sitting
- Walking
- Stairs up
- Stairs down

Body-fat % estimation

Neural network that
calculates the body-fat
percentage from data
provided by the user.

