

Open source health monitoring and evaluation systems using python

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Introduction

What are Health monitoring systems:

- Various sensors monitor health parameters
- Sensors are integrated with processing and memory units
- Data is analyzed in online and offline mode
- Data reflects status of subject's health

Why Open Source

- Reduce cost
- Induce innovation
- Faster development processes
- Universal access to quality health

Sensors

- Heartbeat measurement sensor
- Blood pressure measurement sensor
- Temperature measurement sensor

Experiments

Two proposed experiments:

- Classifying runners
- Sleep detection in elderly patients

Classifying runners

- Problem statement

- Runners run differently but are evaluated on similar parameters
- We aim to classify running patterns and accordingly evaluate the runners for their type of running

Hardware

- Sensors: Accelerometer and Gyro
- Platform: Arduino
- Software for data analytics: Python

Electronic schematics for hardware

In Progress ...

Data analytics

In Progress ...

Sleep detection in elderly patients

- Problem statement

- Elderly patients wearing continuous health monitoring system can save device energy if device can detect sleep
- Sleeping is usually associated with calm physical and mental state

Hardware

- Sensors: Temperature and heartbeat monitor
- Platform: Arduino
- Software for data analytics: Python

Electronic schematics for hardware

In Progress ...

Data analytics

In Progress ...