

In-Ear Wearable device for Health Monitoring System

Status: Filled

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Sponsor(s): WEARTECH LABS

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Project Description

Monitoring health vitals is becoming more accessible as technology continues to advance. Especially, a user's health vitals to be monitored through many commercially available devices. This project looks to develop the hardware for an in-ear wearable device that can be used to monitor health vitals from a user. The main objective would be to have a device worn around the ear that can measure cardiac, blood pressure/oxygenation, respiration rate, brain signals and head movements that would be used to monitor the health of a user. Many sensors and devices exist that can measure these signals such as electrocardiograms (ECG)/ballistocardiograms (BCG) for cardiac activity, electroencephalograms (EEG) for brain signal activity, photoplethysmography (PPG) for blood pressure/oxygenation and sensitive accelerometers for body and limb movements. Each signal would be fused together to provide information about the user's vitals conveniently to any of their connected personal computers or devices. To achieve this objective, engineering work would be required to develop a hardware prototype that would be able to combine sensors in a non-intrusive wearable platform that provides a convenient experience for the user.

The health monitoring industry for health monitoring is advancing conveniently for user's at home and professionals in a

Required Skills

Required:

- Professionalism; committed, punctual and so
- Good communication skills (oral and written)
- General knowledge of hardware design (elec
- General knowledge of programming language
- General knowledge of mechanical design (Sc

Asset:

- Experience with Wifi or Bluetooth
- Knowledge of health tracking devices and ser