Health RECOVER

TRANSFORMANDO LA REHABILITACIÓN FÍSICA

Reporte

Implementación del uso de HealthRecover, un dispositivo para monitorizar y promover la recuperación de la funcionalidad del miembro superior después de un accidente cerebrovascular

Equipo de Investigación

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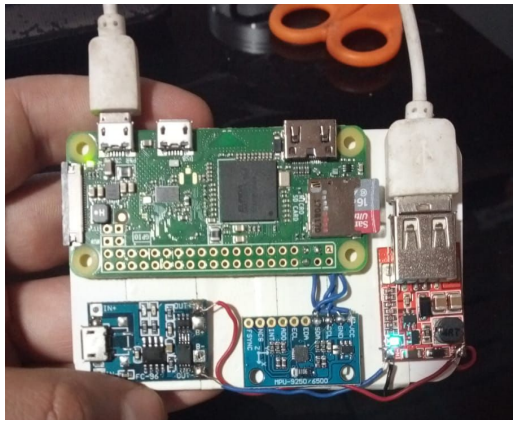
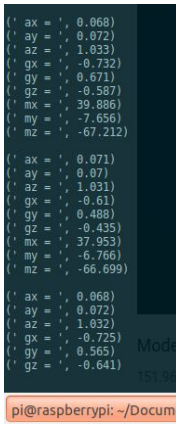
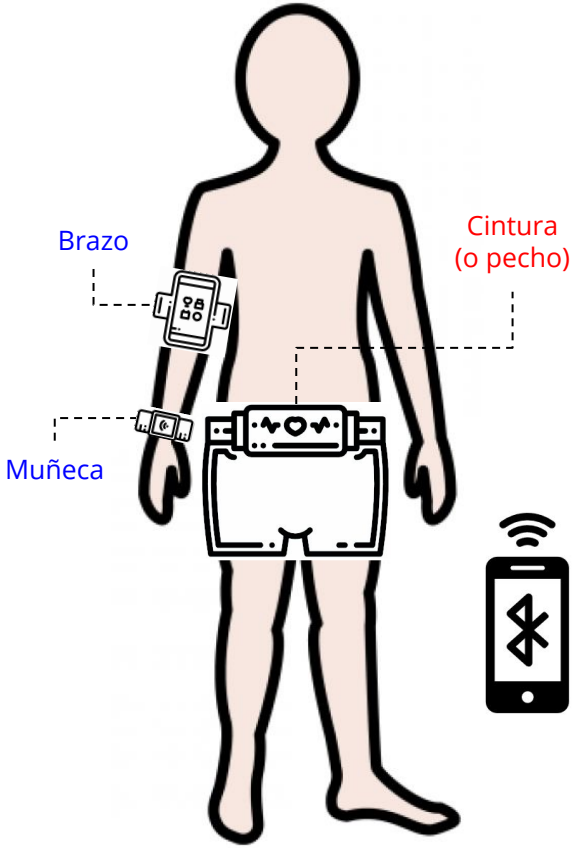
Nueva propuesta de tecnología wearable para Health Recover

El sistema de monitoreo remoto de Health Recover:

- **Dispositivo 1 - Cintura / Pecho** (NUEVO)
  - Procesador: Raspberry pi Zero w
  - Sensor: MPU9250 (magnetómetro, giroscopio, acelerómetro)
  - Base de datos: MongoDB
  - Comunicación: MQTT, Bluetooth
  - Energía: Bateria LiPo 2500mah





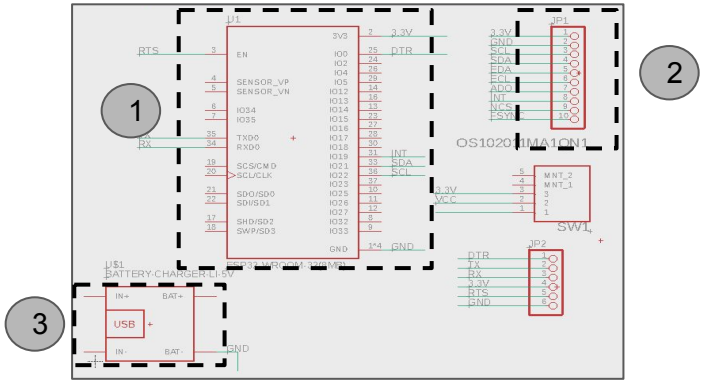


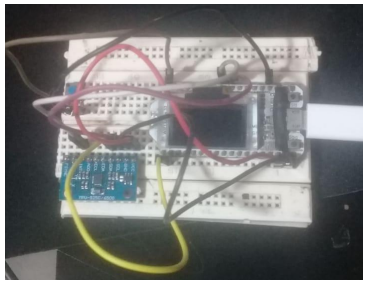
Nueva propuesta de tecnología wearable para Health Recover

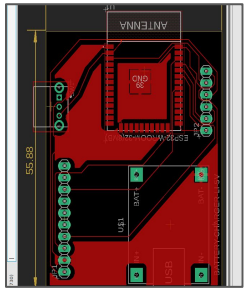
El sistema de monitoreo remoto de Health Recover:

- **Dispositivo 2 - Brazo** (ACTUALIZADO)
  - Procesador: ESP8266 **(1)**
  - Sensor: MPU9250 **(2 - sólo conectores)**
  - Comunicación: MQTT
  - Energía: Bateria LiPo 1000mah **(3 - sólo conectores)**

- **Dispositivo 3 - Muñeca** (ACTUALIZADO)
  - Procesador: ESP8266
  - Sensor: MPU9250
  - Comunicación: MQTT
  - Energía: Bateria LiPo 1000mah

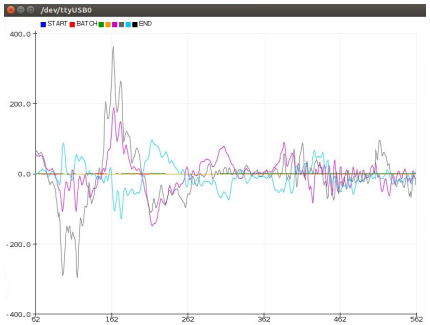


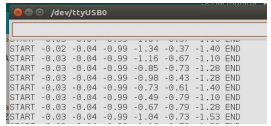




35 mm

52 mm





Referencias

SWORD Health [Internet]. SWORD Health. 2019 [cited 2019 Dec 9]. Available from: https://swordhealth.com/

Kickstarter. FIVIS: Wearable Sensor Belt Helps You Develop Proper Posture [Internet]. 2019 [cited 2019 Dec 9]. Available from: https://www.kickstarter.com/projects/thecore/fivis-weak-core-bad-posture-and-back-pain-relief-solution

Kickstarter. Flexr: Control Technology with Your Muscles [Internet]. 2019 [cited 2019 Dec 9]. Available from: https://www.kickstarter.com/projects/1492366788/flexr-control-technology-with-your-muscles

Kickstarter. 1Coach: Wearable that trains you to run like a Pro [Internet]. 2019 [cited 2019 Dec 9]. Available from: https://www.kickstarter.com/projects/46265006/1coach-your-personal-ai-powered-running-coach

Chien C, Xia J, Santana O, Wang Y, Pottie GJ. Non-linear complementary filter based upper limb motion tracking using wearable sensors. In: 2013 IEEE International Conference on Acoustics, Speech and Signal Processing. 2013. p. 963–7.

Miezal M, Taetz B, Bleser G. On Inertial Body Tracking in the Presence of Model Calibration Errors. Sensors. 2016 Jul;16(7):1132.

Ordóñez FJ, Roggen D. Deep Convolutional and LSTM Recurrent Neural Networks for Multimodal Wearable Activity Recognition. Sensors. 2016 Jan;16(1):115.