WaveBank

Organizing EEG data to provide insights into Dementia.

5 Problems With Current Dementia Research

1. No robust tools to collect EEG data.
2. Not enough consistent and day-to-day data on the brain activity.
3. Expensive hospital equipment is needed to collect reliable data.
4. Not enough context from data collected.
5. Patients do not want to advertise in public that they have dementia.

Our Solution

> Scan patient's EEG data by using Muse

> Transfer data through BLE to a phone

> Upload data to our database

+ Researchers can use a user interface to access and graph data in a specific time period that dementia was detected.

Advantages of WaveBank

1

Save Time, Reduce Costs, Less Difficult to Use, Wider Distribution

Patients now can wear the device and experience normal life with remote testing, without frequently going to hospitals and do long and expensive testings.

2

Gather Massive Reliable & Uniform Data

Because data is gathered in day-to-day environments with contexts, and collected through uniform widely-distributed hardware, it is likely to be more reliable.

3

Ability for Future Modifications

Our platform will allow for future features like cameras and more sensors to be easily added and integrated. Such as a camera could be added for remote memory testings.

Technical Components

Software System
+ Flask & PostgreSQL Server
+ Letsencrypt SSL to secure health data
+ Android App posts Muse data to server
+ OpenCV streams FPV video
+ Website portal to download and graph data

Hardware System
+ Muse headband
+ IP Remote Camera
+ Android Phone with BLE
+ Baseball hat

The Team

Marcel O'Neil	Simon Zirui Guo	Kevin Shen	Curtis Chong
marceloneil.com	simonguo.tech	goo.gl/mNRK0z	chongcurtis.com