

# Mind Your Control: Controlling Appliances with EEG Waves Ajan Subramanian, Arian Reyes, Jose Fregoso, Josh Escalona

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#### Background

People with paralysis, limb deficiencies, and muscular dystrophy face difficulties completing daily tasks. Reading their EEG signals can assist them to achieve their goals. Research and development of Assisted Technology (AT) has advanced to make devices more accessible to people with such disabilities. An initiative from this program is to promote development of devices and guides that train users to use them efficiently.

### Challenges

#### **Current:**

- Refining algorithm to interpret EEG signals
- Establish connection between interpreting computer and cellphone using Firebase

# **Project Goals**

# **Use Your Brain To Control Devices Efficiently**

• Read and interpret EEG signals using MindWave Mobile device • Use these signals to control **Bluetooth-enabled devices** 

## **Schematics**





Barreto, Amando B, et al. "A Practical EMG-Based Human-Computer Interface for Users with Motor Disabilities." Journal of Rehabilitation Research and Development, vol. 37, no. 1, Jan. 2000, pp. 53–64.



#### Milestones

 Build the software interface Establish connection between headset and computer

- Read, filter and interpret EEG signals
- Set up Firebase cloud
- Use signal interpretation to
  - control a house appliance

# References

Assistive Technology Acts ." Brain Injury Association of America, 2019,

www.biausa.org/public-affairs/public-policy/assistive -technology-act.



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