Allan Marcio Frederick

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LinkedIn profile

EDUCATION

Bachelor of Science, Electrical Engineering **December/2021**
Technical Core: Data Science and Information Processing
The University of Texas at Austin

Relevant Coursework: Neural Engineering, Brain-Computer Interaction, Data Science, Machine Learning

PROFESSIONAL EXPERIENCE

Laboratory Technician, *Gonzalez-Lima Lab at The University of Texas Austin* **February/2022 – Present**
- Lead the design and build of an LED neuromodulation device to improve brain function and cognition; involves PCB design, power testing, hardware hacking, embedded systems development
- Perform signal processing and analysis of EEG data using MATLAB to observe effects of infrared laser light on neural oscillations
- Participate in weekly meetings to delegate tasks and to provide updates on current projects

Laboratory Research Intern, *Gonzalez-Lima Lab at The University of Texas Austin* **June/2021 – August/2021**
- Partnered with graduate students to collect and analyze EEG data for an experiment involving stimulation of the prefrontal cortex with near-infrared laser light to improve brain function and cognition

Software Engineering Intern, *IpayYou* **June/2019 – August/2019**
- Developed software tools ranging from front-end to back-end for company administrators to increase efficiency and make future collaboration more streamlined

APPLIED ACADEMIC EXPERIENCE

Error-related Potentials Decoder, *The University of Texas Austin* **October/2021 – December/2021**
- Created a decoder to classify error-related potentials using signal processing and machine learning techniques conducted in MATLAB and Python
- Configured data sets for training and testing of models in an efficient manner by use of code modularity
- Streamlined readability by evaluating and visually representing performance of models via figures for easy understanding

LED Wearable Headband Device, *The University of Texas Austin* **February/2021 – December/2021**
- Collaborated in a team of 5 to design and build a wearable LED headband device to improve brain function and cognitive state using infrared LEDs
- Programmed firmware using C++, ensuring proper functionality of the microcontroller by implementing treatment operation sequence, ambient light detection, temperature detection, and blood oxygen level detection
- Led and coordinated meetings with faculty sponsor to relay information, monitor progress, and present slides and system design reports

SKILLS

Programming: MATLAB, Python, Jupyter notebook, C/C++, C#, Java, OSX/Linux command line, EAGLE Autodesk
Applications: Machine-learning, digital signal processing, embedded systems, software development, PCB design
Certifications: CITI Human subject research for social/behavioral researchers
Languages: Fluent in Portuguese, Spanish