Abril Aguilar Lopez

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Computer Science student interested in computer architecture and BCI signal processing. Able to effectively self-manage for independent projects, as well as collaborate as part of a productive team. My intrests include computer archtecture and low level programming, as well as brain computer interface programs.

Skills

`programming` `databases` `linux systems administration` `project management` `version control`

Programming: Javascript, Node.js, React/React Native, C/C++, Python, Git, HTML&CSS

Databases: Firebase Realtime Database, MongoDB

Experience

Co-Researcher, University of California, San Diego

2019 – February 2021, Escondido, California

- Worked with a team of co-researches on the UCSD, CREATE project entitles CS-LISTEN, a youth proprietary action research project to investigate the lack of diversity of K-12 computer science education.
- Our research also provided surveyed school with tangible changes to respond to our findings, which are still in use.

Awards & Recognition

- Winner NCWIT AIC National Honorable Mention 2019
- Winner NCWIT AIC Regional Award 2020

Education

Bachelors of Science, University of California, Los Angeles

- Bachelors of Science, Computer Science, May 2025
  - Member of Crux, IEEE, and SWE
  - Selected Coursework: Software Construction, Operating Systems Principles, Data Abstraction, Data Structures and Algorithms, Principles and Practices of Computing

Projects

- BCI Tinder
  - Crux at UCLA, 2022-2023
    - *Implemented a brain computer interface that can detect spikes in attraction based off alpha waves*
    - *Implemented a varietey of techniques to isolate alpha waves, including FFT algorith and bandpass filters, and multiple preprocessesing filters*
    - *Worked as the leader of my teams programming focused members, was able to take and assign tasks, as well as manage our remote git repository*
    - Technologies used: Open BCI GUI, Open BCI Headset and Cyton Board, Python (including neurokit 2.0 and numpy library)
- Micromouse
  - IEEE at UCLA, 2022-2023
    - *Aimed to build an autonomous robot witht the ability to solve a 16x16 maze*
    - *Used a variety of techniques and disciplines, ie. PID algorithms, maze solving algorithms, and electrical engineering*
    - *Allowed me to pick up skills in lower level interactions between sotware and hardware, as well as creating and organizing board schematics and work as a team leader
    - Technologies used: Eagle, STM Cube IDE, C/C++, variety of parts for creating the mouse board
- Substance Tracker App
  - UCLA, 2022-2023
    - *Built an ios app for users to track and view substance use, data is stored and accessed on a remote database, requireing user authentification*
    - *Worked in a team setting and efficiently create and assigned front end and back end specfic tasks. We also make use of version control with git for concurrency*
    - Technologies Used: JavaScript, Node.js, React, React Native, Firebase, Expo Client, Git, GitHub