Christian Alcalde

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EDUCATION

California State University, East Bay | Hayward, CA **Sept 2015 – May 2020**
Computer Engineering, B.S. **(3.50 GPA)**

- Solid understanding of operating systems and their innerworkings.
- Knowledge of function, Object-Oriented Design principles, and data structures and algorithms.
- Experience designing and building hardware and software systems.

PROJECTS

Autonomous Robot Car **Sept 2019 – May 2020**

- Produced a self-driving robot car that followed a path while avoiding physical obstacles and logging travel data.
- Developed and implemented custom PCB by understanding datasheet documentation provided for each component.
- Participated in code and design reviews with Senior instructor.
- Implemented and programmed ultrasonic and IR sensor functionality using C++ and the Arduino IDE to detect obstacles and follow a predetermined path on the ground.
- Utilized the Joint Test Action Group (JTAG) standard to program the 32-bit AVR CPU.
- Integrated an LCD character display that showed the car's current velocity, acceleration, and total distance travelled.
- Composed a technical journal article outlining the complete specifications and requirements of the robot car.

GAMarket Application **Jan 2020 – May 2020**

- Programmed in Java based on an existing UML diagram and implemented a GUI using Java Swing.
- Designed a JUNIT test suite for the application's various test cases.
- Utilized GIT and GitHub for version control and code sharing between group members.
- Created the account creation system that utilized SQL databases to store an account's login information.
- Implemented each account's game collections and friends lists using SQL.
- Participated in weekly code and design review meetings with group members.
- Learned different concepts and issues that come with the development of large software projects.

Towers of Hanoi Robot Arm **Jan 2019 – May 2019**

- Used a BeagleBone Black microprocessor combined with jumper wires and two L293D H-bridges to power the arm.
- Constructed a Lego robot arm using three servo motors with each serving a different purpose: rotation, vertical movement, and opening or closing the claw. Motor functionality was programmed in Python.
- Robot arm would perform a pre-determined game of Towers of Hanoi with any number of movements possible.

WORK EXPERIENCE

Moreau Catholic High School | Hayward, CA **Oct 2020 – Present**
Independent Multimedia Contractor

- Communicated with Staff to set up on-campus film and photo sessions, being flexible with their scheduling conflicts.

Discounted Kicks (https://www.diskicks.com/) | Remote **Sept 2018 – April 2021**
Website Manager

- Designed website and "paid membership model" and was responsible for maintaining shoe inventory every week.

Corinthian Transportation and Parking | Castro Valley, CA **Nov 2016 – Mar 2020**
Valet Parking Attendant

- Maintained a steady flow of traffic and order during peak hospital hours and tended to each car in a prompt manner.

SKILLS

Computer Languages: Java, C++, Python, MIPS Assembly, SQL, HTML, CSS, JavaScript
Applications: Eagle, Atmel Studio, Visual Studio, IntelliJ Idea, LogicWorks, Arduino IDE, MathCAD, AutoCAD
Lab Tools: Arduino, Beaglebone Black, Basys 3 Artix-7 FPGA
Industry Knowledge: Printed Circuit Board Design, Soldering, Git/GitHub, Soldering, Data Analysis, Data Structures and Algorithms, Operating Systems, VLSI Circuit Design & Layout, Computer Architecture, Computer Networks, Linux