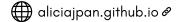


🔀 alicia.paneuwaterloo.ca 🖋 🌐 aliciajpan.github.io 🖋





2021

aliciajpan aliciajpa

Projects

555 Timer LED Flasher PCB | DipTrace, LT Spice, SnapEDA, TinkerCAD

- Created block diagram and circuit schematic to capture NE 555 IC behaviour
- Simulated circuit in LT Spice and TinkerCAD to determine suitable range of passive component values for desired LED flash frequency
- Analyzed datasheets to select compatible and cost-effective components
- Iterated through several layout and routing options during design reviews

Robotics Team Lead & | Machined Robot with VEX Parts

2016 - 2019

- Prototyped and machined parts for precise manipulation of irregularly shaped objects
- · Assembled pneumatic and electrical systems of industrial-sized robots (solenoids, doubleacting cylinders, encoders, motor controllers)
- Coordinated 20+ people in the acquisition and analysis of data on other robots to develop successful match strategies
- Led a drive team of 5 people during high-pressure playoff matches to win 1st place at 2017 and 2019 district competitions

<u>Autonomous Line-Following Car</u> & Arduino Microcontroller & Soldered DC Motors

- Programmed an Arduino-controlled car to tight-poll infrared sensors and autonomously complete a designated course
- Developed performance tests for vehicle mobility and maximum drivable incline
- Resolved edge cases for sensor accuracy by calibrating angle adjustment on difficult turns

Assembly Line Robot | LEGO Mindstorms EV3 Brick & RobotC Programming

2019

2019

- Collaborated in a team of 4 to design, build, and demo an autonomous robot that assembles user-specified parts with logic to handle concurrent time-sensitive requests
- Interpreted readings from colour, touch, gyro, and encoder sensors
- <u>Documented design iterations</u> and tested product performance

Experience

Linear Circuits & Electromagnetism TA | University of Waterloo

Jan - Apr 2021

- Planned help sessions tailored to student needs, attended by 50+ individuals
- Reliably met deadlines to grade 100+ student submissions every week
- Stress-tested labs involving op-amps, capacitors, and AC signals with simulations
- Debugged student circuits and corrected key misconceptions to ensure student success
- Communicated effectively with instructors, first-year students, and admin staff to coordinate scheduling

Research & Design Intern | PASS Inc. 8 | Waterloo, ON

May - Aug 2020

- Led product development of screen time management advice cards & and other mental health resources created with Adobe InDesign
- Conducted 20+ detailed user-base interviews and investigated research papers on the impact of screen time
- Generated 2 international bulk-buy sales via marketing materials such as monthly newsletters and a <u>blog post article</u> &

Girls In STEM Council Member | <u>FIRST Robotics Canada</u> ∂ | Toronto, ON

Aug 2018 - 2019

- Planned a national overnight conference with 100+ attendees to promote equality and diversity awareness in STEM
- Interviewed industry professionals and wrote an article published & by FIRST Canada
- Taught 80+ students ages 5-12 basic robot mechanics and programming as a youth robotics mentor at the Ontario Science Centre

Hardware

- Arduino
- Breadboard Prototyping
- Soldering
- Machining
- Oscilloscope
- DMM

Design

- SolidWorks
- AutoCAD
- DipTrace (PCB Layout)
- LT Spice
- GD & T

Programming

- C/C++
- VHDL
- PLC Ladder
- Assembly (Nios II)
- Python
- MATLAB
- Java

Education

University of Waterloo

Mechatronics Engineering

Class of 2024

Class Representative

Engineering Ambassador

Awards

Norman Esch Award | 2020

Student Entrepreneurship Scholarship

Robotics Team Award | 2019

Outstanding Individual

Contribution

Gareth David Harvard Memorial Scholarship | 2019

Engineering Impact

Interests

Midnight Sun Design Team &

Incoming member on solar car electrical/hardware subteam

Concert Violinist

Mississauga Symphony Youth Orchestra

Volleyball

Competitively trained athlete