Matthew Chan

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Education

Northeastern University (Dean's List) — Boston, MA
Bachelor's in Computer Engineering and Computer Science (GPA: 3.420) — May 2022
Coursework: Embedded Design, Algorithms, Probability and Statistics, Diff. Equations, Linear Algebra

McGill University — Montréal, QC
N.U.in Study Abroad in Canada — August 2018 - December 2018

Work Experience

Flex LTD. — Milpitas, CA
Electrical Engineering Co-op — January 2020 – June 2020

- Programmed ESP32 capacitive touch algorithm in C using deflection and implemented into client's product using I2C communication protocol, designed an integrated Capacitive Sensor hardware fixture for product
- Integrated thermostat software in C with IoT capability, ToF sensor, capacitive touch, and LED controller
- Troubleshot and mitigated noise and distortion avoiding clipping of a speaker system including an ultrasonic directional speaker and an exciter speaker taking input using magnetic field produced by phone speaker through analyzing waveform patterns implementing various filter circuits to optimize signal to noise ratio
- Tuned conductive ink antennas by measuring the S11 reflection coefficient and using Network Analyzers, tuning Pi-Network circuits, and analyzing Smith Charts for 2.44GHz, 5GHz, and dual band reception
- Created schematic in Cadence OrCAD/Allegro suite, designed board layout, and design for manufacturing with cost in mind using Arduino Uno for a 7 segment display alternative designed to undercut price of traditional 7 segment display
- Assisted in troubleshooting failed production units of client's product when battery fuse would trip, found cause of massive current surge because of huge discharge from capacitors and inductors while cutting off power supply and developed report and plan of action for adding current limiter, second resettable digital fuse/FET, and replacing previous fuse with higher rated fuse while under limit of rest of circuitry
- Selected mass production ready components with production quality and cost in mind

OLogic Inc. — Santa Clara, CA
Computer Engineering Intern — May 2019 – August 2019

- Engineering consultancy with clients including, but not limited to: Facebook, Google, NVIDIA, Knightscope
- Found potential dangers with battery when wheels of robot rotate while not powered on and designed a battery protection circuit to prevent and change path of generated electricity
- Calibrated Lidar, Radar, inductive sensors in robots and implemented robot's battery protection circuit
- Used and tested ideal diode circuits to determine optimal frequencies of rectification and implemented into circuits for optimal power consumption and increased efficiency with minimal voltage/IR drops
- Tested and gathered data from circuits using oscilloscopes, wave generators, power supplies, and other professional grade lab equipment

Projects

Personal Website — Palo Alto, CA
Front End Web Development — August 2020 – Present

- Designed and developed front end of web page displaying personal information using Bootstrap, Node, and React components and libraries in CSS, HTML, and Javascript

Gravitational Generator Project — Boston, MA
Lead Designer and Tester — January 2019 – April 2019

- Led a team of 4 to design and develop a system of gears connecting main rotational shaft to electricity generating motor producing 1.5 Watts of power from gravity using SolidWorks and AutoCAD
- Created the wiring, circuitry, and Arduino program to track the power output and voltage being produced

Skills and Interests

Languages: English, Mandarin, Cantonese, Spanish
Technical Skills: C/C++, Python, JavaScript, Java, HTML, CSS, Altium Nexus, AutoCAD, SolidWorks, MATLAB, SimuLink, Logic Design, Arduino, Soldering, Electrical Wiring, PCB Design, Rework, Raspberry Pi, Linux, ESP32, Cadence, Allegro OrCAD, Schematic, RTOS, I2C, RF Antennae, FCC Regulations
Interests: Cars, Escape Rooms, Porsches, Squash, Track Days, Badminton, Volleyball, Basketball, Photography