**Joy Jeong**

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**TECHNICAL SKILLS**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Programming Language**: C++, Java, Verilog, Microcontroller programming, HTML

**Engineering Software**: EAGLE, Easy EDA, Express PCB, MATLAB, LT Spice, Multi Sim, Microsoft Office

**Tools**: Microcontroller Unit (MCU), Field-Programmable Gate Array (FPGA), Function Generator, Oscilloscope, Digital multimeter (DMM), Power supplies

**EDUCATION**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Bachelor of Science in Electrical Engineering**  March 2021

*University of Washington Bothell*

* Trickfire Robotics Club
* Member of Institute of Electrical and Electronics Engineers (IEEE)

**Relevant Courses:** Control Systems, Power Electronics, Microprocessor System Design, Applied Electrodynamics, Devices and Circuits, Signals and Systems, Digital Circuits and Systems, Circuit Theory, fundamental power

**ACADEMIC PROJECTS**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Modular DC-DC Converter,** Capstone Project Spring and Summer 2020

* Led a team of three members to design a DC-DC power converter to operate from an input voltage range of 11 V to 30 V and an output voltage of 48 V at 50 W.
* Performed trade-study on power conversion topologies and component selection to meet the converter’s requirements of having two converters with the inputs connected in parallel and the outputs connected in series to achieve 48 V output.
* Simulated the schematic design in LTSpice to ensure the output voltage, output power, and voltage ripple are as designed and meet all other requirements.
* Utilized EAGLE software for schematic capture and layout on printed circuit board (PCB).
* Tested, troubleshot, and analyzed the integrated system using lab equipment such as power supplies, DMM, function generator, and oscilloscope.
* Executed a detailed report of the converter design and explained performance results.

**Function Generator Design Project,** Microprocessor System Design Winter 2020

* Designed and built a prototype of a function generator within a team using an MCU that can output sine wave, square wave, and triangle wave.
* Utilized ExpressPCB for schematic capture and PCB layout.
* Programmed an Arduino Uno MCU with C programming language to control the function generator.
* Prepared a detailed report that demonstrated that the design functioned properly.

**Multi-Stage Amplifier with Feedback,** Devices and Circuits II Spring 2019

* Communicated with a team to design and build a multi-stage amplifier with a feedback loop to produce a sound using breadboards, transistors, diodes, resistors, capacitors, and wires.
* Tested amplifier’s characteristics and measured voltage gain using an oscilloscope and a function generator to ensure the results are met with the project requirements.
* Demonstrated the sound with different frequencies utilizing a power supply and a function generator.

**Over-Voltage Protection Circuit,** TrickfireRobotics Club Winter 2020

* Researched and collaborated with the electrical team to determine the best suited over-voltage protection method to protect the robot and the robot’s arm actuator from voltage spikes.
* Designed and built multiple protection circuits and simulated in LTSpice to ensure the results are as expected.
* Utilized EasyEDA for schematic capture and PCB layout.
* Assembled a PCB and verified its operation before installing it onto the robot.

**WORK EXPERIENCE**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Samohjung,** Korean restaurantJanuary 2016 – May 2019

* Worked closely with management team to re-structure menu to promote food items with the highest margin, resulting in an increase in sales of 21%
* Trained new server staff on best practices and regularly provided feedback to junior staff to improve customer satisfaction
* Exceeded sales targets by 4% by up-selling appetizers and drinks based on specific tastes and interests of diners
* Coordinated with international partners to expand business focusing on increasing partnership with shipping vendors, developing strategies to decrease logistic cost, and building relationships with clients.

**Teriyaki Garden**January 2014 – Oct 2017

* Counted cash in register drawer at beginning and end of shift
* Mentored new team members on POS system operation, customer service strategies and sales goals
* Promoted customer loyalty and consistent sales by delivering friendly service and knowledgeable assistance
* Reconciled cash drawer at start and end of each shift, accounting for errors and resolving discrepancies