Emma Blatt

2B Electrical Engineering Student

emmablatt.com
elblatt@uwaterloo.ca
US/Canadian Dual Citizen

Skills

- Designed **over ten 2/4 layer PCBs** for work and personal projects with **Altium**, **Eagle, and DipTrace**
- Experienced with **analog/digital circuit design** and **circuit simulation** using **Multisim** and **LTSpice**
- Skilled at **prototyping**, bring-up, circuit assembly, and soldering from personal projects
- Trained in systems testing with **lab measurement equipment** (ocilloscope, DMM, signal generator)
- Well-versed in the selection and **sourcing** of **components** to meet design requirements
- Knowledgeable about analog and digital **communication protocols**, including I2C, CAN, and UART
- Familiar with programming in **C++**, **Python**, **MATLAB**, and **RISC-V assembly**

Work Experience

Electrical Product Engineer, Nytric Inc.

May 2018 to August 2018

- Created schematics and PCB layouts for 31.5" multi-touch frame in **Altium Designer**
- Performed bring-up, testing, and validation of four-layer control board for multi-touch frames
- Tuned power selection circuitry in **LTSpice** and used **oscilloscope** to verify transient behaviour
- Designed and simulated a **discrete switching regulator** with fixed dead-time for the control board as alternative to existing non-synchronous switching regulator

Read about Baanto multi-touch frames here →

Product Design Intern, TD Lab

September 2018 to December 2018

- **Led a small team** of co-op students to develop an artifically-intelligent solution to address the pain points of bill payment, including OCR scanning, a smart reminder system, and automatic payments
- Independently conducted **15+ user interviews** and testing sessions to ensure that solution met user requirements and specifications

Junior Software Developer, Drop

January 2018 to April 2018

- Solved 4000+ customer support tickets, and utilized knowledge gained to design and develop an **app feature in React Native** which reduced the overall number of support tickets by 10%

UW Robotics Team

Electrical Team Co-Lead

May 2018 to Present

- **Managed 15+ people** on the electrical sub-team to design and manufacture the electrical systems to compete in the University Rover Challenge
- Designed schematics and PCB layouts for **rover controller boards** using **Altium,** including safety board and arm control board
- Led a series of workshops with **35+ attendees** on schematic capture, LTSpice simulation, PCB layout, and version control by demonstrating the design of an **AC/DC converter**
- Made electrical harnesses, connectors, and assisted with system-level wiring of rover (including **motor controllers**, **wireless communications**, and **power distribution**)

Watch University Rover Challenge Application →

Electrical Team Member

September 2017 to Present

- Designed end effector board using **DipTrace**
- Performed **EMI testing** on robotic arm to investigate interference between motors and encoders to determine if shielding was needed

Education

University of Waterloo

Sept 2016 to Present

Candidate for Bachelors of Applied Science in **Electrical Engineering, 2022**

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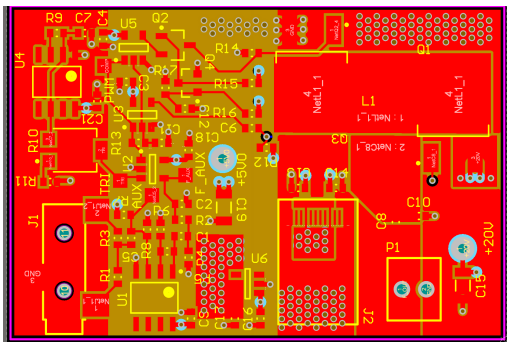
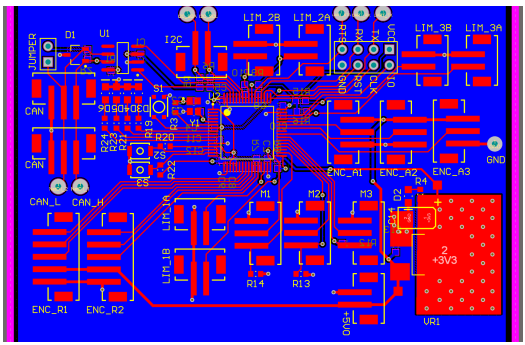
Projects

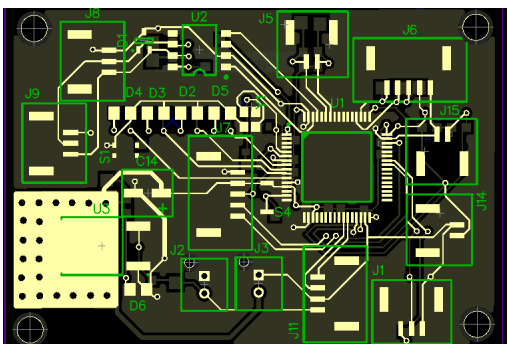
Here are some examples of my design work. Please visit my website, **emmablatt.com**, for process work (ideation, calculations, prototyping, debugging) and full schematics.



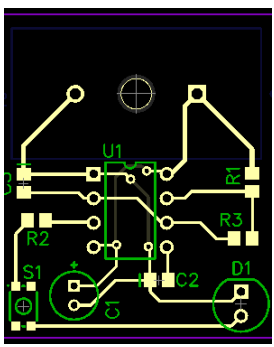
Class-D Amplifier with Discrete Gate Driver

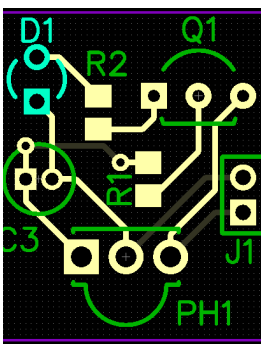


Mars Rover Arm Control Board (2019)

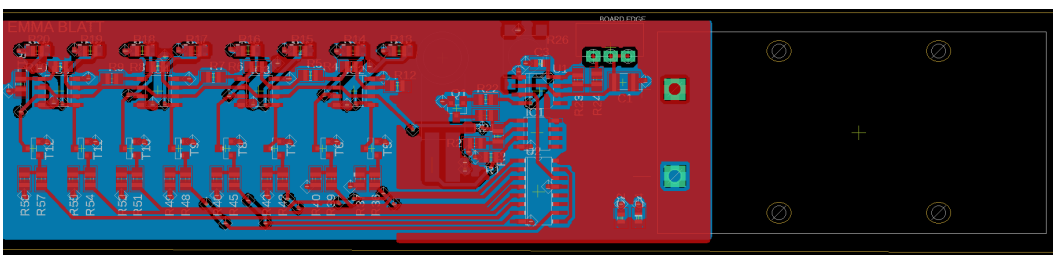


End Effector Control (2018)





IR Transmitter/Receiver Modules



Pressure-Sensitive LED Array with Strobe Functionality