

Emma Blatt

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Dear recruiter,

I'm Emma, and I'm currently seeking a Fall 2021 internship position (September to December). I understand that the job posting is for July to December, but I thought I would apply anyways because I'm very interested in working for Signify. I am a Philips Hue power user (and recommend them to all of my friends) and enjoy the characterization and implementation of sensors, especially for a product that I love.

I have broad experience co-op in the use, testing, characterization, and debugging of LED-related sensors and systems. I spent a year on Apple's iPhone team, where I worked on the validation of the phone's ambient light sensor. I learned about the characterization and measurement of light (including lux calculations and optical/electrical interference), and helped to debug sensor-related issues that arose in validation. One of my previous internships was at a company called Nytric Inc. that designed touch-frames using infrared LEDs and photodetectors to detect optical position. At this internship, I designed the schematics and PCB layout for a 31.5" touch frame, keeping in mind the mechanical constraints of the infrared LEDs.

As a side project, I designed and prototyped an LED array that is controlled by a pressure-sensitive resistor, using multiple colors of LEDs that required tuning to ensure uniform luminance. I also designed an IR receiver and transmitter that could be implemented into a variety of wireless projects.

I believe that I would be a good fit for Signify because I am a quick, enthusiastic learner who has the technical and collaborative skills required to succeed. I would love an opportunity to work and learn at Signify to further develop my hardware and problem-solving skills. Please see my website, emmablatt.com, for examples of my circuit and PCB design work.

Thank you for your consideration.

Best,
Emma Blatt

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Experience

Apple + iPhone System Integration EE

Sept 2020 - Dec 2020

- + Validated system functionality of ambient light sensor module and led flex PCB revision to mitigate power supply noise.
- + Developed MATLAB tool to reduce manual testing for algorithm selection, optimizing power consumption and user experience.
- + Verified power integrity spec for NAND chip using HSPICE, PowerDC, and PowerSI.

Sept 2019 - Apr 2020

- + EE integration of camera sensor including system validation and debugging electrical issues cross-functionally with other teams.
- + Tested gas gauge, charge profile, and battery protection circuitry.
- + Measured wireless charging efficiency and documented charging architectures of competitor devices in comparison to iPhone.

Nytric + Product Design Intern

May 2018 - Aug 2018

- + Created schematics and PCB layouts for 31.5" infrared-based multi touch frame with mixed signal PCB layout using Altium.
- + Designed and simulated a fixed dead-time, discrete synchronous switching regulator which improved full-load efficiency by 10%.

UW Mars Rover Team + Electrical Co-Lead

May 2018 - Aug 2019

- + Managed 15+ people to design and assemble electrical systems for the University Rover Challenge.
- + Designed schematics + PCBs for rover controller boards in Diptrace.
- + Prepared workshop and taught 35+ attendees about the basics of schematic capture, SPICE simulation, and PCB layout.

TD Bank Innovation Lab + Product Design Intern

Sept 2017 - Dec 2017

- + Designed experimental app to address issues with bill payment, and conducted 15+ user interviews to validate prototype.

Drop Technologies + Junior Software Developer

Jan 2017 - Apr 2017

- + Independently designed and implemented app feature that reduced the total number of support tickets by 10%.

About Me

I'm a 4th year electrical engineering student who is passionate about electronic design, sensor integration, and power systems.

Looking for a 4-month internship from Sept 2021 to Dec 2021.

Skills

Design

Altium, Cadence Allegro
Analog/digital circuit design
Prototyping + bring-up
Component sourcing
Skilled with I2C, SPI, CAN

Simulation

ADS, LTSPICE, HSPICE,
PowerDC, PowerSI
PCB layout extraction

Lab

Debug + failure analysis
Soldering + PCB assembly
Power + signal integrity,
spectrum analysis, jitter,
timing measurements

Languages

Python + MATLAB scripting
Familiar with Verilog, C, C++

Education

University of Waterloo

Expected April 2022

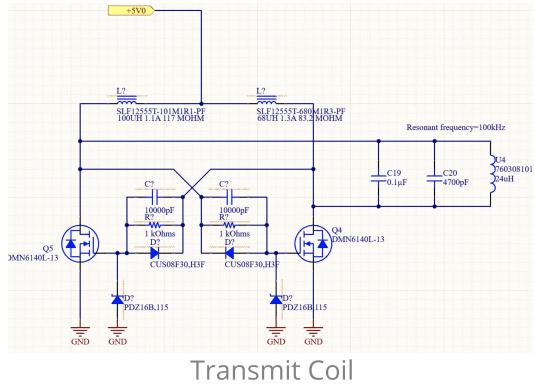
Candidate for B.A.Sc in
Electrical Engineering

Projects

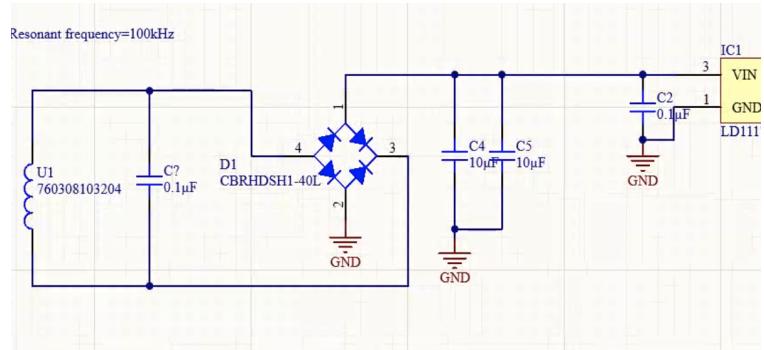
Here are some examples of my design work. Please visit my website, emmablatt.com, for process work (ideation, calculations, prototyping, debugging) and full schematics.

Inductive Charger, Winter 2020 (WIP)

Wireless transmitter/receiver link with resonant inductive coupling and offline power conversion



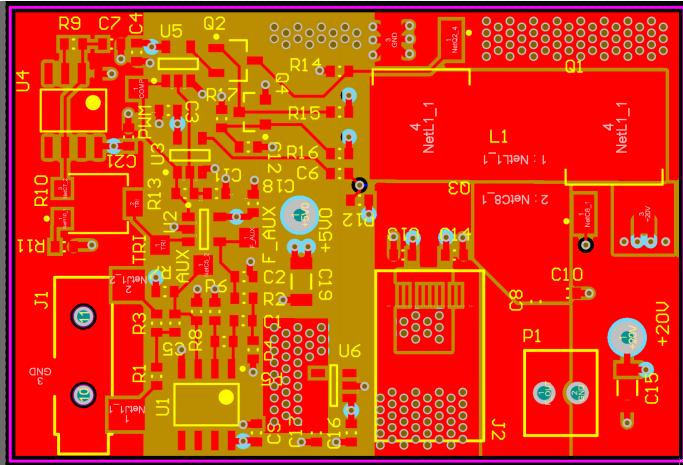
Transmit Coil



Receive Coil

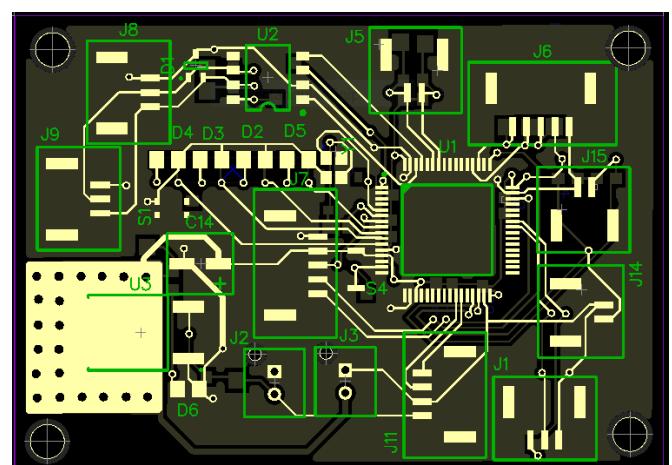
Class-D Amplifier, Winter 2019

18W amplifier with discrete MOSFET gate-driver



Mars Rover Control Board, Fall 2019

Interface motors and actuators with I2C + CAN



Pressure-sensitive LED Array, Spring 2018

Force-sensitive resistor and LED array, with LED strobe functionality (555 timer)

