

# OLIVIA LEE

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## EDUCATION

Bachelor of Science in Electrical Engineering  
University of Michigan – Ann Arbor, MI

*April 2023*

## FELLOWSHIPS & AWARDS

NSF Graduate Research Fellowship Program (GRFP) Fellow  
10K Entrepreneur’s Scholarship Winner

*March 2023*

*May 2022*

## RESEARCH EXPERIENCE

CNPL Lab - University of Michigan BME

*August 2023 – present*

*Graduate Research Assistant*

- Conducted experiments with NHPs to record brain and EMG data to perform online decoding of movement intention with Kalman filters and neural networks
- Debugged firmware, designed test PCBs, and worked with external companies to develop open-source high channel count implantable medical devices for neural recording and modulation
- Engaged in FDA communications and writing pre-submissions for a future IDE for an implantable neural recording device

Blaauw Lab - University of Michigan ECE

*August 2023 – present*

*Graduate Research Assistant*

- Research methods for CMOS-GaAs chip bonding with anisotropic conductive epoxies for a sub-mm scale, wireless neural recording MOTE to sit on the brain
- Serve as the project manager for outsourcing work to different companies and managing parallel workflows
- Wrote statements of work and quotes for companies and conducted meetings with them to discuss progress and next steps

Chestek Research Lab – University of Michigan BME

*August 2021 – April 2023*

*Undergraduate Research Assistant*

- Redesigning a receiver printed circuit board (PCB) for an NIH SPARC Project with Case Western for developing implantable medical devices
- Designed a controller PCB with an antenna and a CAN transceiver for receiving signals from an implanted neural electrode array in the brain, and sending decoded instructions to a robotic prosthetic hand
- Developed firmware and other evaluation PCBs for the development of regenerative peripheral nerve interfaces designed to improve prosthetic control

## **INDUSTRY EXPERIENCE**

May Mobility – Self-Driving Shuttle Service

*May 2022 – August 2022*

*Electrical Engineering Intern*

- Performed experiments on ethernet switches, voltage converters, and power systems with oscilloscopes and load simulators, documented my results, and proposed an improvement to the diagnostic system
- Investigated CAN communication errors in the Autonomous Driving Kit (ADK), identified an issue with bus-integrity, and executed a hardware retrofit to the fleet
- Created wire harness drawings, work instructions, and BOMs for production use

SoundOff Signal – LED Emergency Vehicle Lighting

*May 2021 – August 2021*

*Electrical Engineering Intern*

- Collaborated with electrical, mechanical, and firmware engineers to showcase products for customers, including warning beacon lights for leading OEM trucks
- Mastered surface-mount and through-hole soldering techniques to populate, debug, and rework prototype PCBs
- Conducted research and footprint-comparisons to identify potential component crosses in response to supply-chain challenges

## **TEACHING EXPERIENCE**

Introduction to Electronic Circuits – EECS 215

*August 2022 – Present*

*Instructional Assistant*

- Teach a three-hour lab section each week of 20 students
- Assist in debugging breadboard circuits and solving analysis problems
- Grade students' lab reports and hold weekly office hours to answer homework and laboratory questions
- Work with professors, graduate student instructors, and other instructional assistants to make necessary accommodations and facilitate learning for students

## **TEAM PROJECTS**

Multidisciplinary Design Program – Subaru R&D

*January 2022 – Present*

*System Architect & Team Lead*

- Collaborating with a multidisciplinary team of students and Subaru sponsors to build a naturalistic driving data collection system to help Subaru gain insight on driver interaction with autonomous features
- Built a system to collect and store two hours of video, audio, location, and vehicle data along with a web-based interface for data analysis
- Facilitated weekly meetings with sponsors and tracked project management plan

Systems Design II – COVID-19 Capacity Tracker

*September 2021 – December 2021*

- Implemented a laser trip wire system mounted on a doorway to monitor room population and determine COVID safety
- Designed PCBs that coordinate with teammates' mechanical and software components of the system to ultimately achieve 100% tracking accuracy

## LEADERSHIP EXPERIENCE

Women in Science and Engineering – Residential Program *September 2019 – May 2021*

*Peer Mentor*

- Equipped and mentored first-year women in STEM disciplines living in the WISE community
- During the pandemic, I mentored three freshmen virtually as we all adapted

New Life Church – Campus Ministry

*September 2019 – Present*

*Small Group Leader*

- Lead weekly prayer gatherings and musical worship sessions
- Coach upcoming leaders to cultivate a strong community and encourage spiritual growth

## COURSEWORK

Neural Engineering (BME 517)	<i>Winter 2024</i>
Analog/Digital Interfaces (EECS 511)	<i>Winter 2024</i>
Analog Integrated Circuits (EECS 522)	<i>Winter 2024</i>
Monolithic Amplifier Circuits (EECS 413)	<i>Fall 2023</i>
Intro to MEMS (EECS 414)	<i>Fall 2023</i>
Digital Circuit Analysis & Design (EECS 312)	<i>Winter 2023</i>
Embedded Systems Controls (EECS 461)	<i>Fall 2022</i>
Machine Learning Principles (EECS 498)	<i>Fall 2022</i>
Analog Circuit Analysis & Design (EECS 311)	<i>Winter 2022</i>
Introduction to Semiconductors (EECS 320)	<i>Winter 2022</i>
Probability Methods for Engineers (EECS 301)	<i>Fall 2021</i>
Digital Signal Processing (EECS 351)	<i>Fall 2021</i>
Control Theory and Design (EECS 460)	<i>Fall 2021</i>
Electrical Engineering Systems & Design I, II (EECS 200, 300)	<i>Fall 2020, 2021</i>
Programming and Introductory Data Structures (EECS 280)	<i>Fall 2020</i>

## HONORS and SCHOLARSHIPS

Summa cum laude, University of Michigan BS-EE *April 2023*

Dean's List *4 semesters*

University Honors *5 semesters*

## SKILLS

Cadence, CALIBRE, MATLAB, Simulink, Stateflow, Python, C/C++, Microchip Studio, CANalyzer, Vector Products, Eagle, Altium, LT Spice, Rapid Harness, Soldering, Animal Research