

Charlotte Lee

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EDUCATION

Johns Hopkins University

Aug. 2018 – May 2022

Bachelor of Science in Biomedical Engineering

Baltimore, MD

- **Relevant Coursework:** Biomechanics, Tissue Engineering, Neural Systems, Medical Device Design
- **GPA:** 3.94/4.00
- **Activities:** Biomedical Engineering Society (Vice President), Hopkins Robotics Club, Engineering World Health

EXPERIENCE

Research Intern

Jun. 2021 – Aug. 2021

National Institutes of Health (NIH)

Bethesda, MD

- Developed a wearable device for monitoring patient vitals, improving accuracy by **15%** compared to existing systems.
- Collaborated with a multidisciplinary team of doctors and engineers to test prototypes on **30+ patients**.
- Designed signal processing algorithms to clean and analyze ECG and PPG data in real time.
- Wrote technical reports and presented findings at a symposium attended by **200+ researchers**.

Undergraduate Research Assistant

Sep. 2019 – May 2021

Johns Hopkins Department of Biomedical Engineering

Baltimore, MD

- Worked on a project to develop bioengineered scaffolds for neural tissue regeneration.
- Designed and tested scaffold prototypes, demonstrating **30% increased cell adhesion rates**.
- Performed image analysis using MATLAB to quantify cell growth and distribution.
- Published findings in the **Journal of Biomedical Materials Research** as a co-author.

PROJECTS

VitalTrack: Remote Monitoring System

Python, Arduino, MATLAB

Jan. 2022 – May 2022

- Developed a remote monitoring system for tracking heart rate and oxygen levels in patients.
- Integrated Arduino microcontrollers with sensors to collect and transmit real-time data.
- Implemented MATLAB algorithms for anomaly detection, achieving **95% sensitivity**.
- Conducted user testing with **20+ participants**, receiving positive feedback on usability.

Bionic Hand Prototype

C++, ROS, SolidWorks

Aug. 2021 – Dec. 2021

- Designed and built a bionic hand prototype capable of mimicking natural hand movements.
- Integrated electromyography (EMG) sensors for gesture detection and control.
- Created a ROS-based control system to process EMG signals and drive motor actuation.
- Received **1st place** in the Johns Hopkins Design Competition.

TECHNICAL SKILLS

Languages: Python, C++, MATLAB, SQL

Frameworks: ROS, SolidWorks, TensorFlow

Tools: Arduino, Git, MATLAB, ImageJ

Technologies: Biomedical Devices, Tissue Engineering, Signal Processing, Neural Interfaces