

# Elizabeth Luo

eluo@seas.upenn.edu, (413) 262-5598

## EDUCATION

### University of Pennsylvania, School of Engineering and Applied Science, Philadelphia, PA

- Bachelor of Science in Engineering: Biomedical Engineering Aug 2023 – May 2027
- Minor: Computer Science, Data Science
- Master of Science in Engineering: Robotics Jan 2025 – May 2027
- GPA: 4.0/4.0
- Relevant Coursework: Scalable and Cloud Computing, Applied Machine Learning, Big Data Analytics, Introduction to Robotics, Brain-Computer Interfaces, Materials for Bioelectronics, Computer Vision, Cellular Engineering

## RESEARCH EXPERIENCE

### Cullen Lab, University of Pennsylvania | Undergraduate Research

December 2023 – May 2025

- Focus on optogenetic control of tissue-engineered motor units for neuroregenerative medicine
- Maintained general lab responsibilities, aid research coordinator in various graphic design projects

### ZWBF Lab, RWTH Aachen University, Germany | Research Internship

May 2024 – August 2024

- Designed and fabricated device to monitor biogel turbidity using CAD modeling and circuitry
- Optimized parameters for 3D bioprinting through contact angle and machine variable analysis
- Explored intercultural training through experience abroad in Germany

#### Publication:

E. Luo, "Statistical Identification of Significant Genes to Control Chemotherapy-Induced Peripheral Neuropathy," *IEEE Conference Global Reliability & Prognostics and Health Management*, October 2022

## WORKING EXPERIENCE

### ISO New England | Machine Learning Intern

May 2025 – August 2025

- Create scraper using WebDriver and LLM to extract emissions limits from generator operating permits at 15x speed increase
- Refine energy forecasting model to incorporate emissions limit regulations

### Computer and Information Science | Teaching Assistant

August 2024 – July 2025

- Led committee to prepare weekly recitations for CIS 1600 (Mathematical Foundations of Computer Science)
- Held recitations, office hours, review sessions for over 200 students

### Penn Museum Library | Circulation Desk + Shift Manager

October 2023 – present

- Supervise daily operations, open and close library, ensure shifts are filled, manage circulation tasks

## COURSE PROJECTS

### Robot Arm Block Pick-and-Place

- Use computer vision, robot control systems, and kinematics to adaptively detect poses of blocks
- Grab and stack static blocks and dynamic blocks on moving platforms

### Human-Cockroach-Machine Interface:

- Control movement of cockroach leg and motor through EMG readings and voice signals
- Stimulate muscle contraction through signals, manipulated through changing frequency and voltage

### Computer Vision Exercise Tracker

- Developed webapp with live tracking to compare users' poses throughout exercises and give feedback on form
- Utilized LLM with RAG to generate detailed, personalized feedback

## LEADERSHIP AND VOLUNTEER

### West Philadelphia Tutoring Project | Tutor

September 2023 – present

### Penn Baking Club | President

February 2024–present

## SKILLS & INTERESTS

Technical: AWS, R, Python, CAD, Arduino, Spark, Java, JavaScript, SQL, Excel, soldering, ROS, MATLAB

Languages: Chinese, Spanish, German, American Sign Language

Interests: Crocheting (launched online store “Coco Crochet”), sewing, running, guitar, gardening, harmonica, jiu-jitsu