

JESSICA QIU

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EDUCATION

Boston University College of Engineering
Bachelor of Science in Electrical Engineering
GPA: 3.86/4.0

Boston, MA
May 2027

Relevant Coursework:

- Electronics | Logic Design | Electric Circuits | Engineering Design | Programming for Engineers (MATLAB) | Intro to Programming (Python) | Differential Equation | Modern Physics

Activities: BU Mars Rover Club | BU Engineering Without Borders | BU Society of Women Engineers

PROJECTS

Acrylic Truss Design Project || February 2025 – May 2025

- Designed and built an 8-joint Warren truss, achieving a predicted maximum load of 65 oz \pm 1.35 oz
- Performed MATLAB-based force and buckling analysis, including uncertainty and failure-mode modeling.
- Fabricated truss with precision acrylic cutting and reinforced tape joints; tested design against theoretical predictions.

FPGA + VGA Implementation of Snake Game || November 2024 – December 2024

- Designed and implemented a Snake game on FPGA with VGA output, featuring dynamic scoring, difficulty levels, and variable snake speeds.
- Developed Verilog code for game logic, display, and player input.

Biometric Sensor for Exercise Device || October 2024 – December 2024

- Developed a wearable device to track wrist acceleration and rotation, helping tennis players improve swing performance.
- Designed an interface allowing users to input custom acceleration & rotation ranges and receive real-time haptic feedback with a compact, fitness tracker-style design.
- Built and tested the prototype using an Arduino-based system and integrated haptic feedback.

Temperature Sensor Monitor || February 2024 – April 2024

- Designed the circuitry for temperature sensor interface.
- Programmed the Arduino Uno to read sensor data and display temperature values.
- Drafted components in OnShape and soldered the electric components together.

MATLAB Final Project || November 2023 – December 2023

- Created MATLAB program to search a database, infuse data into compatible spreadsheet, and create readable output with a group of three.
- Played around with Machine Learning and analyzed the predicted versus actual outcome.

EXPERIENCE

BU College of Engineering

Undergraduate Teaching Assistant - ENG BE/EC 556: Optical Spectroscopic Imaging

Boston, MA
January 2025 – Present

- Teaching Assistant for ENG EC/BE 556: Optical Spectroscopic Imaging.
- Grade assignments and exams.
- Held weekly office hours and responded to student questions by email and in zoom, helping students strengthen their understanding of optical spectroscopy and imaging techniques.

BU Ji Xin-Cheng Research Group

Undergraduate Research Assistant

Boston, MA
November 2024 – Present

- Assisted two postdocs in developing nonlinear vibrational imaging systems, including Vibrational Relaxation Energy Fluorescence (VREF) and Stimulated Raman Photothermal (SRP) microscopy.
- Conducted optical system alignment (pump-probe synchronization, beam characterization, difference frequency generation).
- Cultured and maintained *C. elegans* and *E. coli* for experimental use, including bleaching, chunking, and agar plate preparation.
- Performed fluorescence microscopy on *C. elegans* gut granules to study autofluorescent lysosome-related organelles.
- Applied image analysis workflows and informatics tools to interpret biological and spectroscopic data.

Pulp Internet Corporation

Software Engineering Intern I

Brooklyn, NY

June 2024 – August 2025

- Designed and tested NLP algorithms using Python, spaCy, NLTK, and OpenAI.
- Analyzed datasets with pandas and numpy, building visualization dashboards in Streamlit.
- Built pipelines to analyze and visualize personality data using Python and interactive dashboards.
- Engineered storytelling UIs and transcript viewers, transforming structured JSON into scroll-synced timelines and hoverable speaker panels.
- Developed animated vector field visualizations of rhetorical dynamics using JavaScript, Plotly, and Mapbox.

Real Estate at Boston University

Office Assistant

Boston, MA

September 2023 – May 2024

- Answered phone calls and emails in a professional manner.
- Organized paperwork by scanning and printing documents.
- Locating and attaching files and keys to location for maintenance and leasing.

SKILLS

Programming & Software: Python, MATLAB, Verilog, JavaScript, OnShape, Technical Writing, Revit, Microsoft Office

Optics & Imaging: Fluorescence microscopy, Vibrational imaging (F-MIP, VREF, SRP), Laser alignment

Biological Techniques: *C. elegans* husbandry (bleaching, chunking, plate preparation), Microbial culture (*E. coli*)

Prototyping & Tools: Soldering, Circuit design, 3D modeling (OnShape), Woodworking and machine tools