

Nathan Gong

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EDUCATION

Northeastern University | Boston, MA

2019 - 2023

Bachelor of Science in Bioengineering. Minor in Computer Science. GPA: 3.99/4.0

Coursework: Computer Systems, Algorithms, Object-Oriented Design, Database Design, Discrete Structures, Dynamical Systems, Biomedical Data Science, Systems Biology, Biostatistics, Bioelectricity, Biomechanics, Fluid Transport

Honors: University Honors Program, Tau Beta Pi, President's Award, Honors Research Award, PEAK Research Award

EXPERIENCE

Software Engineer Co-op | *Medtronic* | Boston, MA

Jan 2022 - Jun 2022

- Built a full-stack desktop app to automate analysis of off-the-shelf software within a surgical robotics platform
- Scraped known software anomalies and cybersecurity vulnerabilities from REST APIs for internal risk analysis
- Architected code to improve efficiency, extensibility, testability, and maintainability from existing processes
- Collaborated in an agile team to scope feature requests, produce design documentation, and review pull requests

Teaching Assistant | *Northeastern University* | Boston, MA

Sep 2020 - Aug 2022

- Held weekly office hours to assist students across upper-level computer science and bioengineering courses
- Provided aid with assignments, coding, and exam preparation by emphasizing core concepts and problem-solving

Embedded Software Development Engineer Co-op | *iRhythm Technologies* | San Francisco, CA

Jan 2021 - Jun 2021

- Developed automated testing infrastructure to support regulatory clearance of cardiac monitoring device firmware
- Designed APIs to interface with firmware and manufacturing software tools and configure embedded systems
- Automated firmware validation and verification test cases to accelerate release cycles and reduce manual burden
- Enforced CI/CD and provided cross-functional unit, integration, and smoke tests through test-driven development

Research Assistant | *Northeastern University, Apfeld Lab* | Boston, MA

Dec 2019 - Dec 2020

- Investigated genetic pathways involved in aging and stress resilience in *C. elegans* and their human orthologs
- Engineered a multi-worm tracker in Python to produce quantitative locomotion data from microscopy footage
- Analyzed data to make predictions on *C. elegans* behavior when exposed to compounds in chemotaxis assays

PROJECTS

Agroindustrial Carbon Capture System

Jul 2022 - Present

- Develop a hydroponic container farm system to analyze carbon sequestration and feedstock conversion of crops
- Define project scope via literature and prior art review, trade studies, ethics analysis, and sponsor consultation

Image Processor

May 2021 - Jun 2021

- Designed a layered image manipulation and enhancement app offering a Swing GUI and batch scripting interface
- Supported image file handling, filtering and color transformations, and programmatic image generation

NULabs

Feb 2021 - Apr 2021

- Built a Flask web application to navigate the research laboratories consolidated across all departments at NU
- Designed a MySQL schema to store and query real-world data parsed in Python via various user access levels

BioPy

Jun 2020 - Aug 2020

- Built a Python package implementing bioinformatics algorithms for common genetic and hereditary analyses

Kidney Disease Model

May 2020 - Jun 2020

- Created a mathematical model in MATLAB to study kidney filtration rates in patients with glomerulonephritis

SKILLS

Languages: Python, Java, C++, C, SQL, HTML, CSS, JavaScript, MATLAB

Libraries/Frameworks: Requests, BeautifulSoup, Selenium, Pytest, Pandas, NumPy, Matplotlib, Tkinter, Flask, Swing

Technologies: Git, Jira, MySQL, WSL2, Vim, Jupyter, SCPI