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: CS: Computer Systems, Algorithms, Object-Oriented Design, Database Design, Discrete Structures
BIOE: Biostatistics, Systems/Synthetic Biology, Fluid Transport, Biomechanics, Bioelectricity, Physiology
Honors: University Honors Program, President's Award, Honors Research Award, PEAK Research Award, Dean's List
Activities: Tau Beta Pi, Biomedical Engineering Society, MIT Science Olympiad, Intramural Tennis

EXPERIENCE

Software Engineer Co-op | *Medtronic* | Boston, MA Jan 2022 - Present
- Implemented a tool to identify and assess use cases of off-the-shelf software within a surgical robotics platform
- Parsed known software anomalies and cybersecurity vulnerabilities from web sources to perform risk analysis
- Practiced agile development and revised the codebase to adhere to design standards to promote code extensibility

Teaching Assistant | *Northeastern University* | Boston, MA Sep 2020 - Dec 2021
- 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 510(k) 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
- Generated HTML test reports to log debug information and display data plots gathered during firmware test runs

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

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: Java, Python, SQL, C++, C, HTML, CSS, JavaScript, MATLAB
Libraries/Frameworks: Pandas, NumPy, Matplotlib, Tkinter, Flask, Swing, Requests, Pytest, Bootstrap, PyMySql
Technologies: Git, Jira, MySQL, WSL2, Vim, Jupyter, SCPI, Arduino