Nathan Gong

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EDUCATION

Northeastern University | Boston, MA 2019 - 2023
Bachelor of Science in Bioengineering. Minor in Computer Science. GPA: 3.96/4.0
Coursework: Computer Systems, Algorithms, Object-Oriented Design, Database Design, Discrete Structures, Statistics, Biomedical Data Science, Modeling & Inference, Dynamical Systems, Systems Biology
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 aggregate web data and perform risk analyses for a surgical robotics platform
- Architected and implemented Python code to improve efficiency from existing analysis methods by several hours
- Scraped software anomalies and cybersecurity vulnerabilities from REST APIs to identify potential risk factors
- Collaborated in agile teams 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

PROJECTS

Predicting Biodiversity and Dynamics Sep 2022 - Dec 2022
- Simulated predator-prey systems to predict how environmental factors influence emergent community behaviors
- Generated differential equation models and data visualizations to identify patterns in population stability

Agroindustrial Carbon Capture System Jul 2022 - Dec 2022
- Performed techno-economic analyses on crop efficacy to offset carbon emissions and optimize farmland use

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 NEU
- 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

SKILLS

Languages: Python, Java, C++, C, SQL, R
Libraries/Frameworks: Pandas, NumPy, Matplotlib, Requests, BeautifulSoup, Selenium, Pytest, Tkinter, Flask
Technologies: Git, Jira, MySQL, WSL2, Vim, Jupyter