Nicholas Rosenau

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Education

Northeastern University — Boston, MA
Graduate Certificate Computer Science — Sep 2019 - May 2020

Emmanuel College — Boston, MA
BS Neuroscience — Sep 2013 - May 2017

Work Experience

Lattice Automation — Remote
Software Engineer — January 2023 - Present

- Developed a React/Flask web application for molecular assembly using Genbank files and architecture spreadsheets. Enhanced tool by reporting assembly discrepancies and enabling auto-downloads of constructed labeled Genbank files. Integrated pydna to apply Golden Gate Assembly protocols on genetic sequence uploads.
- Help direct software architecture for a significant multi-year public health research grant. Orchestrate the development of a full-stack application focusing on RNA construct design, sequence visualization, and RNA manufacturing process standardization. Implemented an Auth0-backed user authorization framework and used React, Prisma, Nest.js, and MongoDB to optimize performance. Prioritized REST API development and enhanced user navigation with Swagger UI for API documentation.

Lattice Automation — Remote
Junior Software Engineer — January 2021 - January 2023

- Converted cutting-edge Synthetic Biology research into functional software by translating an academic paper (https://pubs.acs.org/doi/10.1021/acssynbio.5b00232) into a data science initiative using Python. Employed K-means clustering and linear regression with numpy and scikit-learn to analyze biological datasets.
- Crafted a full-stack web application based on React/Flask/AWS to better leverage NCBI BLAST software. Delivered frontend development using JavaScript/ES6, React, Sass, HTML, and CSS. Explored frontend testing with Cypress and drove UI/UX design through Adobe XD mockups.
- Built a labratory management tool using React/Flask/PostgreSQL/AWS. Diversified database management skills by working with both MySQL and PostgreSQL.
- Specialized in DevOps, setting up Gitlab and Github CI/CD pipelines. Utilized custom Python libraries for CloudFormation JSON creation and engaged with a suite of AWS services including ECS, ECR, S3, EC2, EFS, AWS Lambda, and RDS.

Whitehead Institute for Biomedical Research (MIT) — Cambridge, MA
Genetically Engineered Models (GEM) Technician II — January 2018 - January 2021

- Worked as a laboratory technician in the lab of MIT professor Rudolf Jaenisch. Designed and implemented wet lab CRISPR experiments for scientists across the research institute and MIT community. Completed multiple projects for 13+ scientists across MIT as well as pharmaceutical companies in Cambridge, MA.
- Published author in the scientific journal Molecular Cell (https://pubmed.ncbi.nlm.nih.gov/31422875/).

Technical Skills

Languages:	Python, Javascript, Typescript, HTML/CSS, C, Swift, Rust, SQL, Bash, Java
Frameworks and Libraries:	React, Flask, Node.js, UIKit, SwiftUI, Express.js, Next.js, Keras, scikit-learn
Tools:	Git, Docker, AWS, GCP, CI/CD, Gradle, Google Colab, Storybook

Side Projects

Utilizing machine learning in the browser via Rust and WebAssembly
Built a React app that embeds WebAssembly and utilizes multithreading in the browser. Created a k-means clustering model in Rust that takes in CSV data as input and outputs cluster centroids and predicted data values.

Awards

LatchBio Hackahon - 2nd place — LatchBio
Awarded second place at the LatchBio Hackathon hosted in Boston MA. — August 2022