Nicholas Rosenau

Software Engineer | New York, NY

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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 multi-year public health research grant worth **$60M** total. 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 laboratory 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 — *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.

EDUCATION

Northeastern University, Boston, MA — *Graduate Certificate in Computer Science*

September 2019 - May 2020

Emmanuel College, Boston, MA — *BS in Neuroscience*

September 2013 - May 2017

SKILLS

Programming Languages

- Python
- Javascript/Typescript
- HTML/CSS
- C
- Rust
- SQL
- Bash

Frameworks and Libraries

- React
- Flask
- Node.js
- Next.js
- Express.js
- scikit-learn
- Keras

Tools

- Git
- Docker
- AWS
- GCP
- CI/CD
- Storybook

PROJECTS

Traverse Company Website

Created a professional website for an Airbnb management company using Next.js

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/PUBLICATIONS

LatchBio Hackathon - 2nd place   **August 2022**

Awarded 2nd place at LatchBio Hackathon hosted in Boston MA.

Published in Molecular Cell   **August 2019**