**EXPERIENCE**

**Mammoth Biosciences, Inc.**

Software Engineer, Full Stack Mar 2022 – Oct 2023

* + Strategically led the optimization and management of cloud infrastructure, leveraging Terraform to deploy scalable solutions combining, batch jobs, and AWS Lambda functions.
  + Orchestrated the development of full-stack solutions using Python with Django, MySQL, and ReactJS, significantly enhancing the business value of the CRISPR platform.
  + Led development of a cost-optimized Kubernetes cluster on AWS (EKS), providing scalable computing solutions and end-user accessibility for streamlining research processes.
  + Directed the migration of applications and databases from legacy into structured software environments, enhancing operational efficiency, reducing deployment risks, & accelerating product delivery.

**Berkeley Lights, Inc.**

Software Engineer, DevOps June 2021 – Mar 2022

* + Directed the innovation and implementation of architectural solutions to optimize systems and automate CI/CD processes. Played a pivotal leadership role in cross-functional teams, significantly elevating the company's infrastructure scalability and operational efficiency.
  + Transformed bioinformatic solutions into commercial-grade software, generating substantial revenue and advancing the company’s technological footprint.
  + Vigilantly monitored system performance, ensuring optimal operation and swift resolution of issues.

**Duke University**

Data Scientist Jul 2018 – Dec 2020

* Applied quantitative analysis, experimentation, the presentation of data to develop research strategies.
* Spearheaded the development of advanced RESTful API applications, provided essential tools for bioinformaticians, enabling pioneering research and enhancing the institution's data processing capabilities.
* Lead library prep and sequencing strategies for SARS-CoV-2 samples as part of public health surveillance, which pinpointed the identification of the novel strain variant CAL.20C.

**Stanford University**

Senior Analyst Oct 2013 – Jul 2018

* + Oversaw the development and management of computing pipelines for large-scale assays, significantly advancing laboratory automation.
  + Demonstrated exceptional leadership in conceptualizing and executing pipeline development for exploratory research, driving innovations and problem-solving in laboratory processes.
  + Exemplified superior communication skills, simplifying complex technical concepts for diverse teams and fostering a collaborative environment, further enhancing project outcomes and team productivity.

**COMPUTATIONAL SKILLS**

* **Programming Languages:** Bash/Linux, Go, Python, Node, ReactJS, HTML/CSS/JS, C/C++, PHP
* **Cloud Computing:** Amazon Web Services (AWS), Google Cloud Platform (GCP)
* **APIs & Frameworks:** Docker,Django, Flask, Kubernetes, Luigi, NextJs, Prefect, Redux, Terraform
* **Database:** MySQL, PostgreSQL

**EDUCATION**

**San Jose State University Bachelor of Science in Applied & Computational Mathematics**

* **Relevant Coursework:** Bioinformatics**,** Differential Equations, Dynamical Systems, Numerical Analysis, Scientific Computing, Mathematical Modeling, Statistics, Object-Oriented, Data Structures and Algorithms
* **Undergraduate Research:** A Gap-Oriented Genetic Algorithm for aligning multiple protein sequences based on computational biology concepts and principles.

**PUBLICATIONS**

* **Au EH**, Fauci, C, Luo Y, Mangan RJ, Snellings DA, Shoben CR, Weaver S, Simpson S, Lowe CB. Gonomics: Uniting high performance and readability for genomics with Go. <https://doi.org/10.1093/bioinformatics/btad516>. **Bioinformatics 2023.**
* Mangan RJ, Alsina FC, Mosti F, Sotelo-Fonseca JE, Snellings DA, **Au EH**, Carvalho J, Sathyan L, Johnson GD, Reddy TE, Silver DL, Lowe CB. Adaptive sequence divergence forged new neurodevelopmental enhancers in humans. <https://doi.org/10.1016/j.cell.2022.10.016>. **Cell Press 2022**.
* Wucherpfennig JI, Howes TR, Au JN, **Au EH**, Roberts Kingman GA, Brady SD, Herbert AL, Reimchen TE, Bell MA, Lowe CB, Dalziel AC, Kingsley DM. Evolution of stickleback spines through independent cis-regulatory changes at HOXDB. <https://doi.org/10.1038/s41559-022-01855-3>. **Nature Ecol. Evol. 2022.**