Eric Au

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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 such as load balancers, batch jobs, and AWS Lambda functions.
- Orchestrated the development of full-stack solutions using Python with Django, MySQL, and ReactJS, significantly enhancing the accuracy and business value of the CRISPR diagnostics platform.
- Led the creation of a cost-optimized Kubernetes cluster on AWS Cloud (EKS), scaling Jupyter Hub Notebooks to bolster end-user accessibility and streamline 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, R&D — Jul 2018 – Dec 2020

- Spearheaded the development of advanced RESTful API applications, revolutionizing the retrieval process of genetic data. My leadership in these initiatives 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 Research Associate, Bioinformatics — 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:** Go, Bash/Linux, Python, NodeJs, ReactJS, HTML/CSS/JS, C/C++, PHP
- **Cloud Computing:** Amazon Web Services (AWS), Google Cloud Platform (GCP)
- **APIs & Frameworks:** Dask**,** Docker, Django, Flask, Kubernetes, Luigi, Prefect, Redux, Slurm, Terraform
- **Database:** MySQL, Postgre

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.**