Eric Au

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EXPERIENCE

Mammoth Biosciences, Inc.

Software Engineer, Full-Stack — Mar 2022 – Oct 2023

- Managed and optimized cloud infrastructure with Terraform, deploying scalable solutions including load balancers, batch jobs, and AWS Lambda functions, achieving improved consistency and efficiency.
- 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

- Pioneered innovative architecture designed to optimize existing systems, build new infrastructure to automate and scaling continuous integration and deployment solutions contributing significantly across cross-functional teams.
- 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

- Engineered advanced RESTful API applications for efficient retrieval of genetic data, providing critical tools for bioinformaticians and facilitating groundbreaking research.
- 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.
- Optimized data processing workflows with sophisticated job submission pipelines, enabling the assembly of a comprehensive Telomere-to-Telomere 22-chromosome genome, showcasing the integration of complex bioinformatic algorithms with computer science techniques.

Stanford University

Senior Research Associate, Bioinformatics — Oct 2013 – Jul 2018

- Developed and managed computing pipelines for large-scale laboratory assays, enhancing automation and supporting the pipeline development for exploratory research projects, demonstrating exceptional problem-solving in laboratory automation.
- 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.**