Spencer Uyematsu

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EDUCATION

University of California, Berkeley, CA | May 2024
M.S. Molecular Science and Software Engineering | GPA: 3.98

Pomona College, Claremont, CA | May 2023
B.A. Molecular Biology | GPA: 3.87 | Varsity Baseball

EXPERIENCE

Proteios Technology, Seattle, WA
Bioinformatics Scientist I | May 2024 - Present

- Developed a deep learning model to predict aptamer-target protein affinity using PyTorch and Azure ML, enabling the optimization of aptamers for specific binding properties, leading to the development of aptamers able to isolate cells with four key cancer and stem cell biomarkers.
- Designed and implemented a SQL database on Microsoft Azure to centralize and manage historical NGS data, improving data accessibility and scalability.
- Led computational analyses for an interdisciplinary team of four PhD scientists, developing workflows and maintaining centralized repositories for record keeping, documentation, and analysis.

Bioinformatics Intern | Jun 2023 - May 2024

- Built Python pipelines for high-throughput sequencing data analysis, processing over 500 million aptamer DNA sequences from SELEX experiments.
- Developed k-mer based clustering algorithms using C++ to identify structural similarities between aptamer candidates, facilitating the identification of promising candidates based on primary/secondary structure analysis.

University of California, Berkeley, CA
Lecturer | May 2025 – Present

- Developed curriculum and delivered lectures for Python for Molecular Science, a graduate-level programming course; evaluated student performance through assignments and assessments.

Sepion Technologies & UC Berkeley, Alameda, CA
Graduate Capstone | Jan 2024-May 2024
Title: Cell Failure Mode: Detecting Failure Mechanisms in Lithium Metal Batteries

- Automated identification of cell failure mechanisms in lithium metal battery testing using a Python-based time series anomaly detection model, deployed on AWS Redshift and EC2. Replaced engineer-driven manual analysis, increasing classification accuracy to 97% and processing efficiency to ~50,000 data points/second.
- Engineered a well-documented Python package and an interactive web app using Shiny for Python, enhancing user accessibility and interaction with the anomaly detection program.

Pomona College Department of Molecular Biology, Claremont, CA
Undergraduate Senior Thesis | Sep 2022-May 2023
Title: Quantifying Cellular Differentiation: The Role of Ascl1 and Neurog2 in Neurogenesis

- Developed a Python-based model to quantify and simulate gene regulatory networks governing neural stem cell differentiation.
- Presented research findings to faculty members and peers in my department.

City of Hope, Duarte, CA
Stem Cell Biology Research Intern | Sep 2022-May 2023

- Led a project to identify patient-specific therapeutic candidates for brain tumors.
- Compiled and analyzed mutational data, molecular profiling, and drug screening results for patient tumor samples and neurosphere cell lines using R.

SKILLS

Python (PyTorch, Sklearn, Pandas, NumPy), C/C++, Parallel Computing (OpenMP, MPI, CUDA), R, SQL, Linux/Unix, Version Control (Git, GitHub)