

Spencer Uyematsu

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EDUCATION

University of California , Berkeley, CA	May 2024
<i>Masters of Molecular Science and Software Engineering</i> GPA: 4.00	
Pomona College , Claremont, CA	May 2023
<i>Bachelor of Arts: Molecular Biology</i> GPA: 3.87 Varsity Baseball	

EXPERIENCE

Proteios Technology , Seattle, WA	Jun 2023-Present
Computational Intern	
Proteios is a startup in the Biotech industry focused on using aptamers for protein and cellular isolation.	
<ul style="list-style-type: none">Engineered Python pipelines for high-throughput sequencing data analysis, processing over 500 million aptamer sequences from SELEX experimentsDeveloped novel k-mer based clustering algorithms using Python to identify structural similarities between aptamer candidates, facilitating the identification of promising candidates based on primary and secondary structure analysisSpearheaded computational analyses for an interdisciplinary team, leading computational workflows for four PhD scientists, and maintaining a centralized repository for data record-keeping, documentation, and analysis	
Seption Technologies & UC Berkeley , Alameda, CA	Jan 2024-Present
Graduate Capstone	
<i>Title: Cell Failure Mode: Detecting Failure Mechanisms in Lithium Metal Batteries</i>	
<ul style="list-style-type: none">Automated identification of cell failure mechanisms in lithium metal battery testing using a Python-based time series anomaly detection machine learning model deployed on AWS Redshift and EC2Engineered a well-documented Python package and a custom web application using Shiny for Python, enhancing user accessibility and interaction with the anomaly detection programReplaced engineer-driven manual analysis, increasing classification accuracy to 97% and processing efficiency to ~50,000 data points/second	
Pomona College Department of Molecular Biology , Claremont, CA	Sep 2022-May 2023
Undergraduate Senior Thesis	
<i>Title: Quantifying Cellular Differentiation: The Role of Ascl1 and Neurog2 in Neurogenesis</i>	
<ul style="list-style-type: none">Developed a Python-based mathematical model to quantify and simulate critical components of gene regulatory networks and associated pathways governing cellular differentiation in neural stem cellsPresented research findings to faculty members and peers within the molecular biology department	
City of Hope , Duarte, CA	Sep 2022-May 2023
Stem Cell Biology Research Intern	
City of Hope is a research center and hospital that specializes in cancer care.	
<ul style="list-style-type: none">Led a precision medicine project to identify patient-specific therapeutic candidates for brain tumorsCompiled and analyzed mutational information, molecular profiling, and drug screening data for patient tumor samples and neurosphere cell lines using R	
InBios International, Inc. Seattle, WA	Jun 2022-Aug 2022
R&D to Manufacturing Transfer Intern	
InBios is a Biotech company focused on providing diagnostic tests for health outcomes.	
<ul style="list-style-type: none">Organized data and experiments to ensure the sensitivity, specificity, and limit of detection of the Covid-19 rapid antigen home-based test productionPlayed a key role in characterizing a new blocker for gold nanoparticle which is more cost-effective and efficient in minimizing non-specific interactions.	

SKILLS

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