EDUCATION

University of California, Berkeley

B.A. Computer Science; B.A. Molecular & Cellular Biology: Biochemistry

Research Experience

Liu Lab, UCSF

Staff Research Associate

- In vivo transcriptome modeling. Fine-tuning single-cell foundation models on in vivo perturb-seq data.
- Spatially-resolved in vivo perturb-seq. Designing experiments and analysis for 3D perturb-seq in GBM.
- Epigenetic editing of TERT. Resolving allele-specific effects of epigenetic editors using nanopore sequencing.
- Investigating GBM response to radiotherapy. Integrating data from *in vivo* perturb-seq, patient data, and xenografts. Led bioinformatics and designed experiments (manuscript under preparation).
- In vivo perturb-seq of GBM tumors and their microenvironment. Method development project. Led bioinformatics and contributed experiments (Genome Biology, 2024)
- Epigenetic editing for chemosensitization in GBM. Analyzed CRISPR screens and conducted experiments with CRISPRoff and CRISPRon (Neuro-Oncology, 2025).

Work Experience

Datavant

- January 2023 January 2024 Software Engineer • Built a payments processing service for Datavant's medical record release of information service that serves up to 10k daily customers.
 - Built an MVP for Datavant's life sciences record retrieval API.

Nuna

Software Engineer Intern

• Designed and built major components of synthetic data generation package that enables Nuna's customer-facing value-based care demos.

LinkedIn

Software Engineer Intern

• Built activity monitoring and cancellation for data pipelines and compute clusters. Features significantly increase on-call response speed and prevent wasted compute.

Datavant

Software Engineer Intern

• Designed and built data distribution features that allow preview, metadata export, and search of deidentified patient data from Datavant's data lakes.

rdkit

Software Developer w/ Google Summer of Code

• Wrote grant, received funding for, implemented, and benchmarked a Python-MongoDB database cartridge that makes it easy to work with heterogeneous chemical data.

PUBLICATIONS AND ABSTRACTS

SJ Liu, C Zou, J Pak, A Morse, D Pang, T Casey-Clyde, AA Borah, D Wu, K Seo, T O'Loughlin, DA Lim, T Ozawa, MS Berger, RA Kamber, WA Weiss, DR Raleigh & LA Gilbert. In vivo perturb-seq of cancer and microenvironment cells dissects oncologic drivers and radiotherapy responses in glioblastoma, Genome **Biology**, 2024.

San Francisco, CA January 2024 - present

August 2018 - December 2022

Berkeley, CA

San Francisco, CA

San Francisco, CA

Sunnyvale, CA

New York, NY

June 2022 – September 2022

September 2021 – December 2021

May 2021 - August 2021

Ann Arbor, MI June 2020 - August 2020

K Lin, C Zou, A Hubbard, S Sengelmann, L Goudy, I Wang, R Sharma, J Pak, K Foster, T Ozawa, JF de Groot, J Phillips, HN Vasudevan, DR Raleigh, A Marson, N Murthy, LA Gilbert, MS Berger, SJ Liu. Multiplexed epigenetic memory editing using CRISPRoff sensitizes glioblastoma to chemotherapy, Neuro-Oncology, 2025.

Conference Abstracts

SJ Liu, N Majd, C Zou, K Mirchia, J Pak, K Foster, K Lin, T Casev-Clyde, K Seo, S Pan, E Payne, H Vasudevan, T Ozawa, M Berger, J de Groot, W Weiss, LA Gilbert, DR Raleigh, OS07.1.A INTEGRATIVE SINGLE NUCLEI, SPATIAL, AND FUNCTIONAL GENOMIC ANALYSES REVEAL DNA-PK DRIVES GLIOBLASTOMA RADIORESISTANCE THROUGH TUMOR CELLS AND THE MYELOID MICROENVIRONMENT, Neuro-Oncology, Volume 26, Issue Supplement 5, October 2024, Pages 22-v23, https://doi.org/10.1093/neuonc/noae144.065

SJ Liu, J Pak, C Zou, E Payne, K Foster, K Lin, HN Vasudevan, T Casey-Clyde, K Seo, T O'Loughlin, D Wu, DA Lim, T Ozawa, J de Groot, MS Berger, WA Weiss, LA Gilbert, DR Raleigh. Coupling In Vivo CRISPR Perturbation with Single Cell Transcriptomics Defines Gene-Treatment Interactions and Reveals Targetable Radiation Vulnerabilities in Glioblastoma. IJROBP. 2023 117 (2)

SJ Liu, J Pak, C Zou, C Pan, E Payne, K Foster, K Lin, T Casey-Clyde, K Seo, T O'Loughlin, D Wu, DA Lim, HN Vasudevan, T Ozawa, J de Groot, MS Berger, WA Weiss, LA Gilbert, DR Raleigh. In vivo CRISPR perturb-seq defines gene-treatment interactions and DNA-dependent protein kinase as a targetable radiation vulnerability in glioblastoma. Neuro-Oncology, Volume 25, Issue Supplement 5, November 2023, Pages 125-126, https://doi.org/10.1093/neuonc/noad179.0475

Projects

Health Engine, Founder and Managing Director

• Health Engine is a nondilutive, seed- and preseed-stage healthcare startup accelerator. It has helped 70 startups secure data partnerships, pilot projects, find investors, and more. To date, its portfolio has collectively raised \$300M. I conceived the idea, recruited the team of 10, raised \$50k from corporate sponsors, built partnerships for startup services, and developed the founder community.

Phoenix Consulting Group, Vice President of Projects, Project Manager 2019 - 2022

• Strategy consulting projects for Medtronic, the American Red Cross, Neurofit, and Myriad Genetics. Developed programming curriculum for new member education program.

Neurotech@Berkeley, Vice President of Consulting, Publications Lead

• Started an industry consulting division that builds software for neurotechnology companies. Started publications division that produces MIND, an interdisciplinary neuroscience publication, and writes shorter pieces about neuroscience, society, and neurotechnology on Medium. Today, Neurotech@Berkeley's Medium page has 20k+ followers.

AWARDS

Accel Scholar Joint venture between Silicon Valley venture capital firm Accel and UC Berkeley's EECS departm 	2022 ent that supports
students in engineering, research, and entrepreneurial pursuits. Kleiner Perkins Engineering Fellow	2022
Presidential Scholar Semifinalist	2018
Teaching	

Ultra, Biology Tutor Inspirit AI, AI Tutor CS61B: Data Structures, UC Berkeley, Tutor

2024 - presentintermittently 2021 – 2022 Summer 2020

2020 - 2022

2019 - 2021

Mentoring

Sasha Sengelmann, UC Berkeley undergraduate Violet Hering, UC Berkeley undergraduate Krish Raval, UC Berkeley undergraduate Francis Chalissery, Software Engineer, Retool $\begin{array}{l} 2024-\text{ present}\\ 2025-\text{ present}\\ 2025-\text{ present}\\ 2025-\text{ present} \end{array}$