

Experience

Staff Research Associate

University of California Los Angeles (2022 - present)

- Conducting research in two labs investigating metabolic and transcriptional reprogramming across prostate cancer disease states:
 - [Goldstein lab](#)
 - [Boutros lab](#)
- Leading two distinct projects in parallel
- Hands-on experience in culturing and performing experiments with ~8 different prostate cancer model systems:
 - Lentiviral transductions
 - Immunoblotting
 - Metabolic tracing assays
 - Viability assays
- Developing and applying computational pipelines for transcriptional analysis
- Developing an R datasets package containing processed transcriptional data from over 200 samples across seven different studies at release:
 - Performed data curation and quality assessment where I detected and corrected sample swaps in external datasets
 - Developed an object-oriented dataset class using the S4 system to enable easy access to metadata, sample information, and analysis methods
 - Added gene set enrichment analysis and meta-analysis features
 - Implemented a gene identifier mapping system to enable cross-species analysis without relying on external databases
 - Resolved graphics-rendering failures caused by memory limits and label collisions in enrichment and volcano plots using custom downsampling and cartesian coordinate offsetting algorithms
 - Extended the default lattice axes labeling system to support logarithmic axes
 - Implemented a custom colour-mapping engine based on deriving and using an affine RGB transformation matrix, enabling continuous two-colour gradients and three-colour (diverging) schemes

Lead K-12 Mathematics Instructor

Mathnasium, LLC (2019 - 2021)

- Provided one-on-one and group tutoring in foundational mathematics (e.g. algebra, geometry, trigonometry, calculus) and other general science courses
- Managed learning center operations on weekends:
 - Administered assessments to new students
 - Managed student learning plans
 - Followed up with leads
 - Scheduled and matched instructors with students

Education

BS: Biochemistry

University of California Los Angeles (2020-2022)

- Conducted biomedical research while completing undergraduate coursework
- Completed a graduate-level course in mass spectrometry proteomics, and upper-division electives in mathematics and machine learning

AA (honors): Social and Behavioral Science

Santa Monica College (2015-2020)

- Explored multiple academic tracks before transitioning to STEM
- Worked part-time in service roles and as a peer tutor for foundational science and math courses

Skills

[Python programming](#)

[R programming](#)

[NumPy](#)

[pandas](#)

[Unix](#)

[Machine learning](#)

[Data science](#)

[Statistics](#)

[Transcriptomics](#)

[Metabolomics](#)

[Nextflow](#)

[git](#)

[Docker](#)

[CI/CD](#)

[High-performance computing](#)

[Pipeline development and applications](#)

[Applied mathematics](#)

[Network analysis](#)

[Simulation-based inference](#)

[Biomedical experimental design](#)

[Mammalian cell culture](#)

[Immunoblotting](#)

[Microscopy and IHC](#)

[Cellular respirometry](#)

[Scientific communication](#)

