## 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:

## • <u>Goldstein lab</u>

- <u>Boutros lab</u>
- 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 carteisan coordinate offsetting algorithms
  - ${\scriptstyle \circ}$  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	$\langle \rangle$
	1
Bython programming	4
R programming	
	1
Machine learning	
Data science	
<u>Statistics</u>	
Transcriptomics	
Metabolomics	
Nextflow	
att	
Docker	
<u>CI/CD</u>	
High-performance computing	
Pipeline development and applications	
Applied mathematics	
Network analysis	
Simulation-based inference	r
Biomedical experimental design	
Mammalian cell culture	
Immunoblotting	
Microscopy and IHC	
<u>Cellular respirometry</u>	
Scientific communication	
Mentorship	