

I'm a proficient with and enthusiastic application builder. I'm passionate about optimization, automation, and statistics-driven decision-making. Opening doors recently unlocked by AI.

## Professional Experience

Full-Stack Data/AI Engineer

Current AI | Walleye Capital

March 2024 - Present

- Drove product end-to-end, from ETL to UI. Deployed bulk ingestion pipelines for millions of records per day; managed event-handlers for each record to reach users; designed customer-facing features.
- Grounded generative AI in software best practices. Evaluated and tuned workflows for structured extraction and generative prose. Built a robust *named entity resolution* service. Combined ranking, chunking, and retrieval strategies to identify and generate content about developing trends in real-time.
- Innovated on tooling. Used a custom agentic loop to generate thousands of unique scripts that scrape high-quality structured data (without AI) from different websites each day.
- Centered software rigor. Maintained high test coverage for backend and frontend code in Python and Typescript, and extended testing paradigms to evaluate non-deterministic AI features.

Software Engineer & Data Scientist

Capsida Biotherapeutics, Inc.

January 2022 - March 2024

- Led widely-used internal software platform (AWS+React+Django) providing: customized genomic design tools; long-running bioinformatics pipelines; scheduling automation and visualization; executive BI analyses; automated handoffs across platforms; integrations with lab robots; IP-related data mining. Onboarded cross-functional contributors, maintained testing suite, documented, and socialized tools.
- Automated lab data plumbing by connecting platforms including: lab information database (Benchling), project management software (Smartsheet), and networked lab instruments. Built a QR-based inventory update system. Fully automated several lab instrument data ingest operations.
- Developed forecasting models for primate immunogenicity, with a decision-support tool that anticipates spontaneous interruptions to animal availability (a widespread challenge in biotech). Built automated analysis pipeline that delivers increasingly precise recommendations to decision-makers as new assay results are recorded in lab information database. C suite relied on forecasts for (expensive!) contracts.

Teaching Assistant for MBA Program

Anderson School of Management, UCLA

2020 - 2021

- Taught "Data and Analytics" to students in the MBA programs as part of PhD track teaching requirements.
- Created (great) statistics course materials with a JupyterHub/git-based deployment pipeline. Students clicked a "magic link" to access cloud-provisioned, SSO-enabled compute environments.

## Freelance Software Development

Automated Scheduling

Sinai Temple

2018, 2019

Automated and optimized scheduling Bar/Bar Mitzvah dates for ~130 students via mixed-integer linear programming.

Carpool Assignment Optimization

GroupThere - grouptherenow.com (offline)

2017 - 2020

Launched a carpool optimization tool for organizations. Minimizes total drive-time sum across groups of 2-100.

Community Safety Intervention Modeling

LA Community Action Network

2017

Re-implemented LAPD's "hotspot" generation algorithm. Compared hotspots to historical arrest/citation/crime report data from City of Los Angeles. Contributed results to community-generated report "Predictive Policing in Los Angeles".

Supply Chain Forecasting, Automation, and Optimization

FactoryOfEverything

2016 - 2017

Developed a model for purchasing, production, shipping, and holding over a factory-warehouse-retail system. Forecasting using classical signal processing, regression, and machine learning. Implemented MVP in MATLAB.

## Education

University of California, Los Angeles

MS - Operations Research. GPA 3.94

2019-2021

Pomona College

BA - Mathematics, Computer Science minor. GPA 3.63

2010-2014

Awarded "Llewellyn Bixby Mathematics Prize" 2014: to the student with highest achievement in the Mathematics dept.

## Research

Pandemic Mitigation Optimization

Anderson School of Management, UCLA

2021

Optimizes decisions that affect compartment flow parameters in discrete-time SIRD disease progression model.

Fairness, Efficiency, and Feature-Awareness

Anderson School of Management, UCLA

2020

Extends strategies for algorithmic fairness from machine learning community to resource-allocation optimization setting.

Generative Models and Sparse Coding

Department of Mathematics, Pomona College

2014

Formalizes connections between Boltzmann Machine Distribution and unsupervised learning via sparse coding.

Anomaly Detection Using Dictionary Learning

University of Minnesota, Minneapolis

2013

Unsupervised anomaly detection in video data using dictionary learning and sparse coding. An NSF-funded REU. Awarded "Outstanding Presentation Award" at Joint Mathematics Meeting, 2014: top 15% undergraduate groups.