

EXPERIENCE

Granica

Research Scientist

Mountain View, Calif.

June 2025 - Present

- **Predicting out of sample error in non-convex settings using Approximate Leave one Out** - estimation of LOO Hessians via low rank updates of the full sample Hessian, masking eigen-directions associated with negative curvature in the LOO Hessian. Resulting prediction error for single index data generating processes with a mismatched Teacher-Student are within single digit percent error.
- **Large Tabular Models** - incorporating column semantics and measuring dataset generalization via per-example permutation of columns.

Google

Research Software Engineer

Mountain View, Calif.

Apr. 2023 - June 2025

- **Bard (Large Language Models)** - core contributor on [Gemini 1.5](#).
- **YouTube (Spatial Super Resolution)** - via Diffusion Transformers.

Google

Senior Data Scientist

Mountain View, Calif.

Nov. 2018 - Apr. 2023

- **Designed recommendation algorithms for YouTube Shorts** - grew the product from zero to billions of users.
- **Lead for Technical Infrastructure** - scaled YouTube Data Science team needs as we grew from 50 to 100 IC's.

Stanford University

Lecturer (2017 - 2023); Teaching Fellow (2016-2017); Teaching Assistant (2016)

Stanford, Calif.

Jan. 2016 - Mar. 2023

- **Earned "Annual Best Lecturer" award 3x** - award is determined by both students and departmental-faculty.
- **Prepared and delivered lectures 2x/week** for CME 211 and 212 (intro and advanced scientific computing in Python and C++), with classes of 80 graduate students in STEM fields; managed a staff of four teaching assistants.
- **Engineered an AutoGrader system** in Python to facilitate programmatic grading of students' computer programs by fetching submissions and generating an interpretable grade report.
- **Synthesized lecture notes** for [CME 323](#), a course in parallel and distributed algorithms.

Airbnb

Data Scientist

San Francisco, Calif.

Sep. 2018 - Nov. 2018

Cardinal Analytx

Data Scientist

Palo Alto, Calif.

Aug. 2017 - Aug. 2018

- **Modeled health insurance claims data** using more than 80k features to predict a variety of outcomes, including nominal responses and orthopedic-joint surgeries. Built out the company's core product(s).
- **Authored robust and extensible production quality machine learning pipelines** enabling state of the art results in a daily production cycle, improving performance 50% beyond a [BMJ Open 2017 research paper](#).
- **Lowered the memory footprint and compute time** by an order of magnitude.
- **Realized business value** by authoring both a risk-based model for actuarial purposes, outperforming state of the art compared with [SOA's annual report](#), and also predicting orthopedic-joint surgeries in effort to route individuals from remote areas in Alaska and Washington to established centers of excellence.

Lawrence Livermore National Lab

Computational Engineering Intern

Livermore, Calif.

Summer 2015

- **Contributed to SparkPlug**, a statistical project for Spark, written in Scala. Implemented distributed MCMC, Bayesian updating methods for use with conjugate priors, and relevant methods for extracting sufficient statistics.

The Brattle Group

Research Analyst

San Francisco, Calif.

May 2012 - June 2014

- **Wrote a spell-checker using regular expressions** to recover thousands of GPS coordinates from a text-field on a proprietary survey with an accuracy rate of 97%.
- **Used ArcGIS and Python** to combine various data sources and examine spatial patterns along the U.S. coastline.
- **Created and presented** eight R training sessions including parallel programming, web-scraping, and text mining.

EDUCATION

Stanford University

Stanford, Calif.

M.S., computational mathematics, 3.96

Aug. 2014 – June 2017

- Capstone thesis with Guido Imbens: estimated causal effects of night life on subsequent day sporting performance.
- Passed ICME Ph.D. qualifying exams in both stochastic processes as well as discrete mathematics and algorithms.

University of California, Berkeley

Berkeley, Calif.

B.A., economics, 3.96

Aug. 2010 – May 2012

- Highest Honors; thesis estimated causal effects of NCAA D1 sports participation on academic success.
- Student Athlete: “walk-on” for the swim and dive team, earned one of two spots on the diving travel squad. NCAA team championships in 2011 and 2012.
- Neufeld Scholar: highest cumulative GPA among all student-athletes in 2012.