

Experience

Google / Search / Quality Software Engineer 2014 - 2017

WebAnswers Prominent Google Search component that serves featured snippets to answer user questions.

- Researched, prototyped, and launched NLP features for a high-throughput low-latency question-answering model, cumulatively improving relative search coverage by ~20%.
- Led a project to progressively roll training and test query sets across 30 locales. This allowed the team to keep language models updated with local current events, while conserving a budget of expensive human evaluators.
- Took ownership of a fragile MapReduce/bash data pipeline, refactored it to Flume, and processed a ~1 PB corpus of English text. Trained an unsupervised named-entity classifier to replace an aging core model feature.
- Collaborated with a Tokyo team to internationalize this named-entity classifier, eventually launching localized models for 10 locales.
- Optimized RAM and CPU usage for a subcomponent of our model running in Superroot, a critical path for all Search queries. This allowed us to launch a feature with no performance penalty.

Palantir / Gotham Software Engineer Intern Summer 2013

Raven Browser GIS deployment used for tactical geospatial data analysis.

- Designed and implemented import, serving, and visualization of time-series data.
- Implemented techniques from computational geometry for data visualization: α -shapes for drawing concave hulls, non-Euclidean Voronoi diagrams for travel times.

Caltech / Control and Dynamical Systems / Richard Murray Group Research Fellow Summer 2011

TuLiP Research project that generates correct-by-construction embedded robot controllers.

- Implemented graph search and filter algorithms to analyze generated finite state automata.

Education

California Institute of Technology 2010 - 2016

B.S. Mathematics, B.S. Computer Science, $\gamma\delta\beta\gamma$, DEI

CS Courses

Machine Learning, Distributed Systems, Operating Systems, Databases, Differential Privacy, Computability Theory, Complexity Theory, Algorithms, Functional Programming

Ma Courses

Abstract Algebra, Real/Complex Analysis, Point-Set/Algebraic/Differential Topology, Differential Geometry, Logic, Combinatorics, ODEs, PDEs, Stochastic Processes, Econometrics, Microeconomic Theory, Game Theory

Technical Skills

Actively using Python, Rust, Bash

Experience with C++, SQL, Java, C, x86 Assembly, Haskell, Scheme, Mathematica, MATLAB, R, \LaTeX

Other

Project Euler 99th percentile among math/programming problem solvers

Bay Area Mountain Rescue Unit Field Member, Operations Lead 2017 - Present

General Aviation Private Pilot (Airplane Single Engine Land) 2018 - Present

More Interests effective altruism, rock climbing, board games, puzzle hunts, pottery