

David Kahdian

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EDUCATION

University of California, Los Angeles

Los Angeles, CA

Computer Engineering B.S., Applied Mathematics B.S.

Sept. 2024 – June 2028

- **GPA 3.982**
- **Honor Societies:** Corporate Chair, Tau Beta Pi; Candidate, Upsilon Pi Epsilon and Eta Kappa Nu
- **Relevant Coursework:** Software Construction, ODE's, PDE's, Game Theory, Analysis, Probability Theory

TECHNICAL SKILLS

Development: C/C++, Python, JavaScript(JS), TypeScript(TS), Java, SQL, Bash

Tools: Linux, VMware, VSCode, Jupyter, MATLAB, LaTeX, Markdown

Libraries: PyTorch, pandas, NumPy, Matplotlib, Selenium

Problem Solving: LeetCode top 5%; Kaggle; July 2025 **Jane Street** puzzle; preparing for 2025 Putnam exam

EXPERIENCE

AI Algorithms Researcher | UCLA StarAI Lab

Sept. 2025 – Present

Pandas, MATLAB, SvelteKit, LaTeX

- Analyzing **12+** AI compilation languages for succinctness, and query and transform tractability
- Developing graphical Knowledge Compilation Map visualizer website summarizing **20+** existing papers
- Extending research knowledge of probabilistic circuit optimization techniques with planned publications

Risk Analysis Research Intern

June 2025 – Present

UCLA Garrick Institute for Risk Sciences

- Saved **100+** hours of recurring data entry tasks by automating conversion of **4 proprietary data types**
- Validated risk data for Diablo Canyon Nuclear Power Plant (provides **23%** of California's carbon-free energy)
- Improved statistical models in Fault Trees and Bayesian Networks, merging into production codebase via GitLab
- Collaborated with 4 interns using C++, Selenium, Django, React, and CI/CD pipelines to streamline development

Data Analyst

Oct. 2024 – Dec. 2024

Harman International (JBL) & UCLA Epicenter Co-op

- Built predictive model for 2025 digital marketing allocation in a **team of 8**, informing regional budget strategy
- Optimized revenue to **11x** marketing spend across **12 regions** with psychographic segmentation
- Built Excel-based quantitative model predicting **11%** revenue increase with Lagrange multiplier techniques

PROJECTS

Machine Learning Portfolio Optimizer (optimize.kahdian.com) | *Python, PyTorch, Pandas, Jupyter*

- Developed a **neural network** powered portfolio optimizer using Modern Portfolio Theory and **deep learning**
- Mined **135 quarters** of forward-looking macroeconomic indicators to train PyTorch neural network
- Achieved **80% R²** accuracy with **33 quarters** of out-of-sample test data to prevent look-ahead bias
- Optimized stock-bond ratio recommendation, published model to Jupyter Notebook

Heston Monte Carlo Simulator (heston.kahdian.com) | *Python, NumPy, JS, C, WebAssembly*

- Created interactive web-based option pricing tool using Monte Carlo simulation techniques
- Utilized Milstein discretization for **1000-step** time series analysis, with comparison to Black-Scholes
- Compiled C script into WebAssembly to **10x** speed for Stochastic Differential Equation (SDE) computation
- Accelerated simulations to **1000+** per second with only 100MB RAM and no parallelism

BruinPlan (bruinplan.com) | *Svelte, TypeScript (TS), Puppeteer, Cytoscape.js, Python*

- Built web+mobile application using enabling UCLA quarterly planning & prerequisite tracking
- Developed Puppeteer script to collect **14,000+ courses** and **130 majors** of data
- Created Python + **Gemini API** pipeline to convert raw data into JSON
- Utilized Cytoscape.js and **topological sort** to create graph-based planning interface

FactCheckSpeech | *JavaScript(JS), Selenium, OpenAI API*

- Collaborated with three other students to create speech transcribing application
- Produced Chrome extension capable of translating and fact-checking **100+ languages** of speech
- Awarded **2nd** place in Congressional App Challenge by Congressman Adam Schiff