Zachary Brandt

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Education

University of California, Berkeley   *Aug 2023 – June 2027*
B.A. in Economics, Computer Science

- GPA: 3.9/4.0
- Awards: Dean's Honors List – College of Letters & Science
- **Coursework**: Machine Learning, Efficient Algorithms, Artificial Intelligence, Computer Architecture, Discrete Mathematics, Data Structures, Algorithmic Economics, Econometrics, Ancient Greek

Experience

Stanford, Berkeley Dept. of Economics   *Feb 2024 – Aug 2024*
Research Assistant

- Conducted econometric analysis and research on estimating cross-sector firm market power
- Led data wrangling, EDA, and visualization using Pandas and R on national employment datasets
- Contributed insights to burgeoning literature on industrial organization and economic policy discussions

Blockchain at Berkeley   *Sept 2023 – present*
Project Manager

- Led teams in developing a ticket marketplace for FIFA, a JavaScript VM for Hyperweb, and Axelar full-stack
- Secured projects by writing grants and responding to RFPs, growing our presence in blockchain
- Oversaw project management, SDLC, DevOps, deliverables, and client communication

Worksheets AI   *June 2024 – Aug 2024*
Summer Intern

- Built and deployed core frontend web app in SolidJS and implemented backend APIs with Node.js
- Designed and integrated AI-powered worksheet generation tools and markets for educators
- Worked closely with the founding team on scaling the platform in the EdTech space

ΑΓΩ Beta Fraternity   *Aug 2024 – present*
Beta Vice President

- Upgraded fraternity house network and internet infrastructure, created new organizational website
- Managed financial operations, including >$70,000 in budgeting, rent, contracting, and banking

Projects

AI Search & Game Trees: Implemented DFS, BFS, UCS, A* with heuristics for pathfinding; minimax, alpha-beta pruning, expectimax for multi-agent games

Reinforcement Learning Agents: Built value iteration, Q-learning, and approximate Q-learning agents with feature extraction

Probabilistic Inference: Developed Bayes Nets with variable elimination, HMMs, exact inference, and particle filtering for tracking

Neural Networks for Classification: Created PyTorch models for digit classification, RNN for language ID, CNNs with custom convolution, attention mechanisms

Snake Game Engine (C): Built playable snake game in C with dynamic memory management, file I/O, and complete game state handling

RISC-V Classifier & CPU: Wrote RISC-V assembly for digit classification; designed pipelined CPU in Logisim with hazard detection and forwarding

NGordnet Linguistic Analysis: Built web tool analyzing Google NGrams data with custom data structures, graph traversal for hyponym queries, TimeSeries visualization

Berkeley SkyDeck: Co-developed mobile recommerce platform using Django and Redis; pitched to investors through SkyDeck Accelerator

Skills

Programming: C/C++, Linux, MATLAB, Python, Java, JavaScript, R, RISC-V, Solidity, SQL

Mathematics: Optimization models, linear algebra, differential equations, probability theory, statistics

Languages: English, German (fluent, C2 certified), Ancient Greek (reading proficiency)