Timothy Guo

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EDUCATION

University of California, Berkeley | B.S. Electrical Engineering & Computer Science, B.A. Cognitive Science   2020 - Present
GPA: 4.0 / 4.0. **National Merit Scholar, Regents and Chancellors Scholar**
Coursework: Structure and Interpretation of Computer Programs (**A+**), Data Structures (**A+**), Computer Architecture (**A+**), Efficient Algorithms and Intractable Problems, Discrete Math and Probability, Multivariable Calculus, Computer Security (**A+**), Introduction to Artificial Intelligence (**A+)**, Data Science, Operating Systems and Systems Programming, Introduction to Machine Learning
Organizations: Blockchain at Berkeley, Traders at Berkeley, Berkeley AI Research, HKN, Debate Society of Berkeley, CalStar

EXPERIENCE

Software Engineering Intern | **D. E. Shaw & Co.** — New York, NY   June 2023 – Aug 2023
- Designed, implemented, and pushed to production a new way to manage remote kernels in **JupyterLab**. Extended **Python** and **Javascript** libraries to support new features. Enhanced security, performance, and customizability. Increased startup speed by **20x**.
- Proposed and implemented a **Jupyter Enhancement Proposal** and multiple PR's in open source adding widely demanded features.

Software Engineering Intern | **Google** — Mountain View, CA   Sep 2022 – Dec 2022
- Integrated and tested a new predictive AUIS media ranking model into Google Assistant's request serving pipeline using **C++** and **Go**.
- Deployed nodes to host models. Migrated models into a new horizontal ranker. Generated signal ranking tables and data trees in **Go**.
- Wrote, ran, and monitored live experiments. Increased satisfactory assistant interactions by **0.44%** with a win/loss ratio of **1.9**.

President | **Blockchain at Berkeley** — Berkeley, CA   May 2022 – May 2023
- Coordinated club-wide operations for over **70 members**. Designed and implemented vision, optimizing for output and retention.
- Expanded B@B's external reputation through events, blogs, and sponsorships. Promoted B@B at conferences and networking events.

Software Engineering Intern | **PayPal** — San Jose, CA   June 2022 – Aug 2022
- Designed, implemented, and deployed to production a **JavaScript** portal for creating, editing, running, and organizing functional tests, pulling data from **GitHub** and **MongoDB**. Developed static analysis tools for new tests. Reduced testing workflow time by **70%.**

Graduate Student Instructor | **Sutardja Center for Entrepreneurship and Technology** — Berkeley, CA   Dec 2021 – May 2021
- Instructed **60+** students on building blockchain startups with industry-leading speakers. Held office hours and graded assignments.

Researcher | **UC Berkeley Center for Human-Compatible AI (CHAI)** — Berkeley, CA   Dec 2021 – Present
- Worked under **Stuart Russell** to evaluate reinforcement assistance learning through sandbox games. Trained agents using **RLlib** and **Ray** to observe a human's actions and assist appropriately. Built infrastructure to communicate between **PyTorch** and Minecraft.

Researcher | **UC Berkeley Haas School of Business** — Berkeley, CA   Sep 2021 – May 2022
- Produced a meta-analysis of risk-taking and power through **Python** data analysis and qualitative assessment of hundreds of studies.

Summer Analyst |**Galaxy Digital** — New York, NY   Jun 2021 – Aug 2021
- Wrote a **JavaScript** arbitrage bot (**0.6%** profit margin) and a **Python** copy-trading bot (**8%** profit margin) using transaction screening.
- Drafted reports on **cross-chain bridging**, **L2 scaling**, **proxy contracts**, and **Ethereum 2.0**. Created and published **SQL** analysis of churn rate and volume by cohort. Evaluated venture deals and valuations and used data parsing to verify claimed projections.

Head of Internal, Project Lead |**Blockchain at Berkeley** — Berkeley, CA   Sep 2020 – May 2022
- Led of team of **8** to design, implement, and prove efficacy of a novel exchange on **Osmosis** to mitigate impermanent loss.
- Led a team of **9** to secure and complete **$60k** grant from **Compound**, a leading defi protocol, for an open-source **UNICEF** consulting project. Redesigned smart contracts and rewrote front-end for increased functionality and stability. Ran extensive tests.
- Spearheaded org-wide recruitment. Organized and administered tabling, interviews, and deliberations for **280+ candidates**. Expanded campus marketing and engagement through varied, targeted messaging with **Facebook**. Increased applications by **400%**.

PROJECTS

Machine Learning Classifiers
- Implemented ML classifiers including decision trees, SVM, GDA, and logistic regression with regularization from scratch in **Python**.
- Achieved over **98.9%** test accuracy on industry-standard datasets (MNIST, CIFAR, Spam, Wine, Titanic) on Kaggle.

Satchel | CTO
- Built an app to provide financial services for underbanked communities **React.js**, **Typescript, MongoDB, Node.js**, and **Solidity**.
- Received **$70k** in grants from **Aave, Polygon, Metacartel,** and **Binance**. Accepted into **Gitcoin Kernel** and **Berkeley Skydeck**.

FairLegal |CEO
- Led a team to build an app to connect underprivileged defendants with underemployed lawyers using **React.js**, **Node.js**, and **Solidity**.
- **Top Five Team** at the DeveloperWeek 2019 Hackathon. **Won** the CA-48 Congressional App Challenge.

Dime |COO
- Built a decentralized sports management game using **Ethereum** and **Firebase. Won** the AngelHack Los Angeles 2018 Hackathon.
- Pitched product to hundreds of investors at AngelHack's Global Demo Day 2018 and won award from **500 Startups**.

SKILLS & INTERESTS

Languages and Frameworks: Java, JavaScript, Python, Golang, Rust, C, C++, Solidity, React.js, React Native, Node.js, SQL, Lisp
Technical Skills: Algorithms, Architecture Design, Blockchain, Machine Learning, Product Management, Business Consulting
Interests: Mandarin Chinese, Spanish, Economics, Politics, Psychology, Social Justice, Debate, Reading, Hiking, Violin, Skiing

AWARDS

First Place | **CS 170 Igloos and CS 61A Hog Algorithmic Programming Contest**   Dec 2021
Nationally Ranked #179 | **USA Computing Olympiad, Platinum Division**   Mar 2018
Eagle Scout | **Eagle Project: Restoring the Eaton Canyon Outdoor Classroom**   Dec 2017