

# Anish Shanbhag

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## EDUCATION

University of California, Berkeley

Class of 2025

B.S. Electrical Engineering and Computer Sciences (EECS)

GPA: 4.00/4.00

**Relevant Coursework:** Operating Systems | **Data Structures** | Discrete Math and Probability | Multivariable Calculus | Databases | **Algorithms** | Computer Architecture | **Machine Learning** | Computer Security | Tech Entrepreneurship

## EXPERIENCE

**PDT Partners - Software Engineering Intern**

June 2023 – August 2023

- Expanding functionality of a highly scalable **distributed compute** platform for **quantitative trading** systems
- Designed and implemented a **fault-tolerant** server provisioning system with **Go**, **AWS Terraform**, and **Prometheus/Grafana**, enabling a **106x speedup** and **97% failure reduction** over the previous implementation

**UC Berkeley Sky Lab/BAIR Lab - Undergraduate ML Researcher**

September 2022 – present

- Investigating the design of **distributed systems** that enable training of **large language models** on smartphones
- Implementing open-source library using **Python/Swift/C++** that optimizes **PyTorch** memory consumption for iPhones
- Formulating end-to-end ML pipeline with a **Google Colab** frontend interface connecting to a **AWS/Gurobi** backend

**Web Development at Berkeley - External Vice President**

January 2023 – August 2023

- Led **3 project teams** including over **30 developers/designers** to source, scope, design, and deliver web apps to clients
- Oversaw all of the organization's external communication, including various **sponsorship deals** and client outreach

**UC Berkeley Engineering - Course Staff**

August 2022 – present

- CS 61B - Fall 2022 - teaching **data structures/algorithms** in lab sections, guiding students through **Java** projects
- CS 198: Intro to Full-Stack Development - Fall 2023 - **Lecturing** on core web technologies like **React** and **SQL**

**Cloud at Cal - Machine Learning Researcher**

October 2022 – January 2023

- Training **ConvLSTMs** (neural networks) to predict near-term change in the road conditions of **autonomous vehicles**, acting as an **early-warning system** for abnormalities identified via **image-based hallucinations**
- Collaborating with team of 4 to aggregate **dashcam footage** and train the model with **TensorFlow/AWS SageMaker**

**Convex - Technical Team Lead**

September 2022 – January 2023

- Leading 10 designers/developers to create a customizable job applicant portal and document the development process
- Utilizing **TypeScript/React/Next.js** and Convex's backend-as-a-service platform to implement the web application

**Weekly - Full-Stack Developer**

January 2022 – July 2022

- Built a SaaS productivity tracking website with **TypeScript/React/Next.js** that helps users analyze screen time habits
- Led 14 developers to architect backend APIs using **Express**, **AWS DynamoDB**, and **OAuth/JWT** authentication

## PROJECTS

**Machine Learning for Mancala**

- Trained **neural networks** to play the board game Mancala via two algorithms - **neuroevolution/deep Q learning**
- Used **Python/TensorFlow/Keras** to test and optimize both algorithms, achieving a **98% win rate** against a naive player
- Wrote a **research paper** comparing the efficacy, performance, and potential limitations of both techniques

**CryoGen**

- Developed a software platform for easy sharing of dynamic code generation tools and interactive programming tutorials
- Created a highly performant **CLI** with **TypeScript/Rust** enabling automatic code transformation via declarative APIs
- Designed and built a website with **React/Next.js/Postgres/Docker** allowing users to write, share, and browse tutorials

**CPU Data Analysis**

- Aggregated and cleaned over **300k unique data points** about **3400+** consumer CPUs using **web scraping** with Node.js
- Utilized **R** and **linear regression techniques** to analyze trends in pricing/performance over the last few decades

## SKILLS

**Languages:** Python, C, C++, Go, JavaScript, Rust, Java, HTML, CSS, TypeScript, C#, SQL, GLSL

**Technologies/Frameworks:** AWS, PyTorch, TensorFlow, React, Google Cloud, Keras, Postgres, Git, Docker, Kubernetes, NumPy, Pandas, Heroku, Firebase, MongoDB, Vue.js, Node.js, Express, React Native, Web Scraping, Redux