Chengkun (Alex) Cao

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Education

University of California, Berkeley Expected Graduation: May 2025

BA, Computer Science and Operational Research Management Science

- **GPA: 3.98/4.0**
- Relevant Courses:
  Data Structures, Computer Architectures, Algorithm, Computer Security, Machine learning, Database, Discrete Mathematics and Probability Theory, Computer Programs

Skills & Capabilities

- **Programming** : Python, C, Java , JavaScript
- **Front-end development:** React, HTML, CSS
- **Database**: SQL, MySQL
- **Machine Learning:** Pytorch, Scikit-learn, PCA, EDA, Data visualization, Computer vision

Experience

Software Engineering Intern July 2023 — August 2023

Aria Earth

- Collaborated in team of 2 on developing a user-centric React JS dashboard under Agile methodologies
- Conducted rigorous testing and QA, rapidly identifying and resolving bugs within user dashboard and website features
- Utilized data-driven recommendations to unveil user behavior trends and improved website traffic by 30%

Research Apprentice September 2023 — Present

Sky Computing Lab

- Worked with a Ph.D. student to investigate machine learning-based techniques for optimizing database transactions
- Designed and implemented innovative embedding methodology to convert SQL queries into vectors for model training

Database Engineer September 2023 — Present

Reach Best

- Partnered with other Berkeley students to devise and implement a relational database (mysql) for an Ed-Tech startup
- Formulated and optimized predictive analysis queries and pipelines for college applications utilizing database system

Research Assistant February 2023 — June 2023

Dan Lab

- Developed a decision tree algorithm to classify lab mice behavior from video data with 99% accuracy
- Trained and validated an open-source CNN model(B-SOiD) in mice behavioral clustering

Projects

CS61CPU September 2023— October 2023

Computer Architecture Class Project

- Designed and built a CPU that runs ISA instruction (RISC-V) using Logisim
- Implemented datapath and control logic for all types of instructions
- Constructed a 2-stage pipeline to improve CPU throughput by nearly 100%

BYOW (Build your own world) November 2022— December 2022

Data Structures Class Project , Software Engineering

- Developed a 2D tile-based game in Java with a focus on user gameplay experience
- Engineered a pseudorandom world generation algorithm, allowing players to access diverse game worlds using different "seed" values, enhancing playability
- Designed user-friendly avatar controls and interactive mechanics
- Ensured smooth integration between the user interface and backend