Ernest Lu

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Education

University of California, Berkeley — Berkeley, CA
Bachelor of Arts in Computer Science — *Aug. 2021 – May 2025*
Relevant Courses: Algorithms (A+), Data Structures (A+), Discrete Mathematics (A+), Artificial Intelligence (A), SICP (A+), Databases (A), Probability and Random Processes (A), Machine Structures (A), Linear Algebra (A+), Quantum Computing (A), Operating Systems (A), Optimization (A+)

Experience

Databricks — San Francisco, CA
Incoming Software Engineering Intern — *May. 2024 - Aug. 2024*

The Voleon Group — Berkeley, CA
Software Engineering Intern — *Jan. 2023 - Apr. 2023; Incoming Spring 2025*
- Implemented interpolation of impact model computations that sped up portfolio simulations by upwards of 25%
- Developed timing tools for plotting, comparing, and aggregating components of simulations
- Created interfaces and models for functions called millions of times by impact model code

Roblox — San Mateo, CA
Software Engineering Intern — *May 2022 - Aug. 2022 and May 2023 - Aug. 2023*
- Fixed production search bugs that prevented results from being shown to daily active users
- Designed experimentation on search with metrics pipelines and varying search algorithms
- Developed automatic prioritization system of Jira tickets created from bugs reported by Roblox creators
- Enabled ticket priority to be updated over time using streaming techniques applied to a delayed queue
- Worked with Docker, C#, AWS, Kibana, Airflow, ElasticSearch and Internal Roblox technologies

UC Berkeley EECS Department — Berkeley, CA
Academic Intern, Reader, Tutor — *Feb. 2022 - Dec. 2022*
- Fall 2022 Reader, Spring 2024 Tutor for CS 170: Efficient Algorithms and Intractable Problems
- Developed full stack project leaderboard utilized by hundreds of teams to check statuses and update solutions
- Taught in twice-a-week discussion sections for Spring 2022 CS 70: Discrete Mathematics and Probability Theory.

Projects

Fifteem | *Heuristic Optimization Contest; UC Berkeley Algorithms* — Apr. 2022 - May 2022
- Implemented approximate solution for an NP-Hard problem based on observations of the recursive and greedy structure of the problem.
- Created executable system that was continuously run overnight to update solution outputs
- Placed 3rd out of 240 teams that used combinations of computational resources and optimization techniques

Badimp | *Algorithms and Data Structures Library* — Aug. 2022
- Created website with copy-pastable implementations of competitive programming algorithms and data structures
- Wrote and tested algorithms/data structures against extensive list of problems

Pintos | *UC Berkeley Operating Systems* — Sept. 2023 - Dec. 2023
- Implemented functioning operating system with additional threading and file system features
- Enabled processes to be run with user arguments, create user threads, and traverse file subdirectories
- Designed implementation details in a group setting, proposing ideas and giving feedback

Honors

- USACO Platinum Division
- AIME Qualifier (X2)
- CodeForces Master Rating (2231)
- 2nd place - UC Berkeley 2023 ACM-ICPC Team Selection Contest
- ACM-ICPC North American Championship Qualifier – UNT Team 1

Additional Information

Languages/Frameworks: C++, Python, Java, C, SQL, JavaScript, HTML/CSS, MATLAB, React
Developer Tools: Git, Docker, AWS, VS Code, PyCharm, IntelliJ, Eclipse, Vim