Ernest Lu

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Education

University of California, Berkeley Berkeley, CA

Bachelor of Arts in Computer Science *Aug. 2021 – Dec. 2024*

Relevant Courses: Algorithms (A+), Data Structures (A+), Discrete Mathematics (A+), Artificial Intelligence, SICP (A+), Databases, Probability and Random Processes, Machine Structures, Linear Algebra (A+), Quantum Computing, Operating Systems, Optimization (A+), Abstract Algebra, Compilers, Graphics

Experience

Databricks San Francisco, CA

Software Engineering Intern *May. 2024 - Aug. 2024*

- Implemented scaling projects to increase file and notebook limits of Git repositories on Databricks workspace
- Developed benchmarks and created metrics for performance and latency of Git operations
- Implemented pagination and batching of requests made from Databricks workspace

The Voleon Group Berkeley, CA

Software Engineering Intern *Jan. 2023 - Apr. 2023*

- Implemented interpolation of impact model computations that sped up portfolio simulations
- Developed timing tools for plotting, comparing, and aggregating components of simulations
- Created interfaces and models for functions called 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

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 project leaderboard utilized by 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

DatalogInt | *UC Berkeley Compiler Optimization* Fall 2024

- Created toy datalog interpreter to optimize bril programs for Compiler Optimization class final project
- Implemented semi-naive evaluation of datalog facts and rules to extract out a resulting set of facts and rules
- Benchmarked datalog evaluation times and resulting compiler optimizations

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

Honors

- ICPC World Finals Qualifier, PacNW 1st Place – UC Berkeley
- USACO Platinum Division
- AIME Qualifier (X2)
- CodeForces Master Rating (2232)
- 2nd place - UC Berkeley 2023, 2024 ICPC Team Selection Contest

Additional Information

Languages: C++, Python, Java, Rust