Leon Zhao

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Education

BS Applied Mathematics & Computer Science, New York University Sep 2022 - May 2024
Selected Coursework: Game Theory*, Topology*, Statistics*, Computational Geometry*, Deep Learning*, PDE, Numerical Analysis, Probability, Analysis, Operating Systems, Computer Architecture, Algorithms (* are Graduate level)

BS Applied Mathematics & Computer Science, University of Delaware Sep 2021 - May 2022
GPA: 3.97/4.0
Selected Coursework: Spectal Graph Theory*, Algebra*, Machine Learning*, Combinatorics*, Discrete Math, Calculus, Linear Algebra, Computer Vision, Bioinformatics, Abstract Algebra (* are Graduate level)

Experience

Software Intern, Codeium — Mountain View, CA Sep 2024 - Current
- Codeium builds one of the most popular and advanced code completion tools today. I worked to build knowledge graphs on different parts of the code for improved completion inference and PR generation with advanced clustering methods. Written in C++.

Research Assistant, NYU Center For Data Science — New York, NY Sep 2023 - Current
- Working to analyze the affects of sampling methods on the differences axes of differences in text generation.

Software Intern, Citadel Securities — Miami, FL Jun 2024 - Aug 2024
- The Research Platform team builds the compute and data infrastructure for Citadel's super computer, serving almost a thousand users with IO limits up to 22 Tb/s.
- I wrote language bindings for performance critical CLI and optimized its performance. The CLI is written in Go and used to perform IO with a VFS. After binding the CLI to C as an intermediary I bound it to Java and Python to make native language clients.
- Implemented async-io semantics across language bindings and optimized CLI performance by moving all computation off of the critical path and during IO with the VFS. Manually managed the python GIL state.
- Created new CI/CD pipeline to automate testing and deploy new CLI as well as language clients onto custom OS image and migrated the existing CLI repository to bazel.

Software Intern, Snowflake — San Mateo, CA Jan 2024 - May 2024
- The Query Compiler team is responsible for the efficient compilation and optimization of incoming SQL queries.
- I worked to optimize a specific class of incoming SQL query's compilation and runtime. This comes out to ~5-10% of the remaining large enterprise customers' unoptimized queries (over 10 second compile times). This was done by applying a compile time constant folding of ternary equality statements within an SQL predicate. All compiler code was written in Java.
- Built dashboards to analyze query runtime and where optimizations could be applied.

Software Intern, Citadel Securities — Chicago, IL Jun 2023 - Aug 2023
- The Low Latency Equities and Futures team is responsible for building out the infrastructure for the entire firms equities trading system, processing billions of orders per day.
- Proposed and implemented new, robust communication protocol for internal order communications. Wrote high performance, generic C++ code to pack exchange order execution messages into a custom protobuf implementation.

Software Intern, Amazon — Cambridge, MA Jun 2022 - Aug 2022
- The Alexa Wake Word team was responsible for all things related to verbally prompting Alexa.
- I automated the testing of the wake-word detection models by deploying a custom CI/CD pipeline that linked to internal servers with 15+ different Alexa device / OS combination.

Teaching

Algorithms TA, New York University Sep 2023 - Dec 2023
- Created homework and exam problems. Graded homeworks and led office hours.

Discrete Math TA, University of Delaware Sep 2021 - Dec 2021
- Led weekly recititation teaching and reviewing new topics. Graded homework and exams.

Algorithms Instructor, AlphaStar Jun 2021 - Aug 2021
- Taught USACO topics to 30 students concurrently over zoom leading daily lectures and problem solving sessions.

Honors

Neo Scholar Finalist 2023

MIT Battlecode Finalist (9th) 2022

Rank 300 Putnam 2022

USACO Platinum Qualifier 2021

AIME x2 2021

Apple Swift Student Challenge Winner 2021