

Annie Hu

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Education

The University of Texas at Austin

Aug 2023 - May 2026

Bachelor of Science in Computer Science, **Turing Scholars Honors Program** (GPA: 4.0)

Coursework: Graduate Prediction Mechanisms in Computer Architecture, Honors Operating Systems, Honors Computer Architecture, Honors Data Structures, Honors Discrete Math, Compilers, Symbolic Programming

Experience

Jane Street, Incoming Software Engineer Intern – New York, NY

May 2025 - Aug 2025

San Francisco Compute Company, Trading Systems Software Engineer – San Francisco, CA

Feb 2025 - May 2025

- Optimized the mixed-integer programming (MIP) matching engine in Rust, reducing P99 execution time from 60s to 200ms (300x speedup) by minimizing search space and simplifying constraints
- Introduced a safeguard to prevent automatic contract destruction when node health reaches zero, ensuring cluster node auto-recovery and improving overall uptime

Five Rings, Software Engineer Intern – New York, NY

Jan 2025

- Enabled structured binding declarations for custom C++ types by specializing tuple operations, defining getter functions, and automating boilerplate generation and testing with Python.

Roblox, Software Engineer Intern – San Mateo, CA

May 2024 – Aug 2024

- Built a full-stack web tool to investigate violative 3D content, aggregating data from multiple backend sources into a centralized display. Took end-to-end ownership of design and implementation
- Conducted interviews with stakeholders to gather product requirements and created a technical specifications document
- Developed a service providing APIs for real-time information retrieval used in frontend tools and backfills, focusing on fast onboarding, maintainability, and scalability for future contributors
- Designed and implemented an easily extensible front-end view in React to support new data sources while supporting search, filtering, and rich media display
- Technologies:** TypeScript, Python, React, Nomad, FastAPI, Elasticsearch, Kibana, Grafana, Docker

The Ohio State University, Teaching Assistant – Columbus, OH

Jan 2021 – Aug 2023

- Led TA team across 4 courses (11 sections, 400+ students), creating rubrics and automating grading via bash scripts
- Graded Software Development, Computer Architecture, and AI courses using Java, C, Python, and x86-64 Assembly

Projects

Sieve | C++, Python, gem5

April 2024

- Designed an innovative combination of filtering and sandboxing prefetching techniques in microcomputer architecture, achieving a performance improvement of up to 4.15% in IPC on the GAP and PARSEC benchmarks
- Implemented the first generalizable perceptron-based prefetch filter that can be applied to any underlying prefetcher, and even multiple underlying prefetchers
- Enabled underlying prefetchers to provide relevant metadata as custom feature input to the multi-perspective hashed perceptron predictor to improve the filter's decision-making ability and overall system performance

Fun Compiler | Rust, C, ARM Assembly

April 2024

- Designed a compiler for a custom pythonic programming language (called Fun) supporting iteration, control flow, functions, anonymous functions, and pointers
- Generated ARM-assembly instructions and implemented optimizations such as constant folding and tail call recursion, reducing average runtimes for equivalent interpreted programs by over 90%

Technical Skills

Languages: Python, Java, C/C++, JavaScript, TypeScript, Rust, OCaml, SQL, x86-64/ARM Assembly

Frameworks: React, Django, PostgreSQL, Nomad, Docker, Node.js, FastAPI

Tools: Grafana, Elasticsearch, Kibana, AWS (Lambda, SNS, SQS, CDK, CloudWatch)