

Daniel Liu

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EDUCATION

Northwestern University

B.S. Computer Science

Evanston, IL

Sep. 2022 – Mar. 2025

- GPA: 3.94
- Relevant coursework: Agile Software Development, Artificial Intelligence, Code Analysis and Transformation, Compiler Construction, Computer Networking, Computer Security, Distributed Systems, Operating Systems, Scalable Software Architectures

TECHNICAL SKILLS

Languages: C++, Python, JavaScript, Ruby, SQL, Go (Golang), TypeScript, HTML, CSS, Java, C, Rust

Frameworks/Libraries: React, Vue.js, Ruby on Rails, Node.js, Express, LLVM, React Native

Developer Tools: Git, Neovim, VS Code, RubyMine, Linux (Debian), AWS, Firebase

EXPERIENCE

Software Engineer Intern

CDK Global

Jun. 2024 – Aug. 2024

Hoffman Estates, IL

- Developed a full-stack web application to allow customer support specialists to view and manage customer data
- Implemented a RESTful API in Ruby on Rails to allow users to retrieve customer logs stored in a PostgreSQL database
- Created a user-friendly interface using Vue.js and TypeScript for users to filter, search, and view customer logs
- Optimized the application by adding database indexes and rewriting ActiveRecord queries to reduce server load and improve user experience

Undergraduate Teaching Assistant

Northwestern University

Sep. 2023 – Dec. 2023

Evanston, IL

- Served as an undergraduate teaching assistant for 200+ students in CS 348: Artificial Intelligence
- Held weekly office hours to provide one-on-one or small group support to students on Python programming assignments

PROJECTS

DefinitelyTyped Fixes | TypeScript

Sep. 2024 – Present

- Contributed to the open-source DefinitelyTyped repository by fixing errors in type definitions for various JavaScript libraries
- Used a contract checking tool to identify and fix type errors in pull requests

Strava Wx | Go, AWS Lambda, Amazon SQS, Amazon DynamoDB

Jul. 2024

- Developed a serverless application in Go that processes Strava activities and adds weather data using the OpenWeatherMap API
- Utilized AWS Lambda functions to process incoming Strava webhook events, store data in DynamoDB, and update activities
- Implemented a job queue using SQS and Lambda triggers to enable asynchronous processing of activities

Purple Hours | JavaScript, React, Firebase

Mar. 2024 – Apr. 2024

- Developed a web app that facilitates office hour scheduling between students and teaching assistants using React and Firebase
- Implemented a queue system using Firebase Realtime Database to allow students to join a session, TAs to accept students, and students to know when it is their turn
- Wrote unit tests using the Vitest testing framework to ensure code quality and reliability
- Utilized agile methodologies to iteratively develop and deploy features with a team of 7 developers

Almost-C Compiler | C++

Jan. 2024 – Mar. 2024

- Built a compiler from scratch in C++ that compiles a C-like language into Intel x86-64 assembly
- Used advanced register allocation and instruction selection techniques to generate performant code
- Implemented compiler optimizations including constant folding, constant propagation, and loop detection to further increase performance of compiled code
- Achieved 3rd place out of 18 participants in the end-of-quarter compiler performance competition