Elliott Yoon

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Education

Northwestern University, Evanston, IL • *Expected June 2025*

BA: Mathematics (3.8/4.0 GPA) | MS: Computer Science (4.0/4.0 GPA)

- Received Award For Excellence in Mathematics by a First Year Student (May 2022)
- Teaching Assistant for MATH 220-1 (Differential Calculus) and CS 396 (Artificial Life)

Skills

Languages: C, C++, Javascript, Python, Java, SQL, Assembly, Racket

Tools: React, Flask, Azure Cloud, Git, Heroku, SQL Server, Numpy, Pandas

Experience

Data Engineering Intern • May 2022 - Aug 2022 • Union Home Mortgage • Strongsville, OH

- Saved over 100 hours of work defining table fields for database migration efforts by creating SQL functions and stored procedures.
- Automated over 90% of reporting workflow to improve data extraction, transformation, and load tasks within Azure cloud enterprise data lakes and data warehouses.
- Scripted Avro file type ingestion using Python to reduce manual pipeline work by over 80%.

Data Science Fellow • Feb 2021 - Aug 2021 • Correlation One (DS4A) • Remote

- Conducted regression analysis, hypothesis testing, and visualization of correlations between Amazon Rainforest deforestation and quantifiers of economic health in Brazil.
- As team lead, coordinated meetings for group of 5. Reported final analysis as a team to an audience of over 1000 people via both a live virtual presentation and a written deliverable.

Projects

Most projects are on GitHub: https://github.com/elliottyoon. All others available upon request.

Compiler • Jan 2023 - Present • C++, Assembly

- Built compiler in C++ that generates Intel x86 assembly code from modern C-based language.
- Implemented liveness analysis, graph coloring, and spilling algorithms for register allocation; designed tiles and implemented tree merging for IR to ISA instruction selection.
- Utilized PEGTL C++ library to build parser.

2048Racer • Jun 2022 - Aug 2022 • Javascript, Golang

- Built React web application that lets users race to beat the game 2048 in real time.
- Utilized Websockets for persistent client-server interactions, configured frontend CI/CD with Vercel, and containerized Nginx reverse proxy with the backend web server with Docker.
- Implemented 2048 AI using minimax + alpha-beta pruning, which successfully beat the game.

Pineapple Pics

- Developed full-stack Instagram clone with Flask and React using an MVC design pattern.
- Built REST API endpoints to handle client requests; rendered data from PostgreSQL database with React via API endpoints.
- Authenticated users using cookies and JSON web tokens.