Elliott Yoon

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Education

Northwestern University Evanston, IL (2021-2025)
B.A. Mathematics (3.81 GPA)

- **Relevant coursework:**[†] Compilers, Database Systems, Data Structures & Algorithms, Reinforcement Learning, Operating Systems, Programming Languages, Systems Programming, Web Development
- **...and just for fun:** Abstract Algebra*, Differential Topology, Graph Theory, Intensive Linear Algebra & Multivariable Calculus*, Number Theory, Real Analysis*, Probability & Stochastic Processes, Smooth Manifolds

Employment

Software Engineer Intern Washington, DC (June 2024 - August 2024)
Palantir Technologies

- Designed and implemented a low-latency algorithm to persist state updates in real-time distributed data systems, increasing the frequency of lossless data synchronization in networks by 7200%.
- Built a parser to generate React component dependency graphs from Typescript monolith repositories, used to visualize and analyze graph properties of the repository file structure for ease of navigation and refactoring.

Teaching Assistant Evanston, IL (September 2022 -)
Northwestern University

- CS 339: Database Systems (Fall 2024): Built a relational database management system in idiomatic Rust.
  - Created internal SQL engine, planner, and optimizer for query execution with transactional concurrency control; built heap file storage engine to cache data persisted on disk to memory with a buffer pool manager.
  - Stubbed out API implementations in select internal modules for students to complete as assignments.
- Other: CS 339: Database Systems (Sp24), CS 396: Artificial Life (Wi23), Math 220: Calculus (Fa22, Wi23, Fa23)

Projects

Compiler — *C++* (January 2023 - March 2023)

- Generates x86 Intel Assembly from a C-based language. Used tiling methods for efficient instruction selection. Implemented liveness testing, graph coloring, and spilling algorithms for register allocation.

2048 Racer — *Go, React, Docker, Websockets* (June 2022 - August 2022)

- Enables real-time instances of the game 2048 in which players can race one another. Developed minimax backtracking algorithm with alpha-beta pruning against which users can compete. (It's successfully beat the game!)

Skills

Languages C/C++, Java Python, Rust, SQL, Typescript
Competitions 2024 ICPC Mid-Central Regional (3rd place), Qualified for 2024 ICPC NAC

[†]4.00 GPA
*MENU: https://www.math.northwestern.edu/undergraduate/menu/