Elliott Yoon

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Education

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

- **Relevant coursework:*** Compilers, Database Systems, Data Structures & Algorithms, Functional Programming, 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, Probability & Stochastic Processes, Real Analysis†, Smooth Manifolds

Employment

Software Engineer Intern — *Java* 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 synchronizations in graphs of peered networks by 7200%.
- Built a parser to generate React component dependency graphs from Typescript monolith repositories; used to visualize and analyze graph properties of repository file structures for ease of navigation and refactoring.

Teaching Assistant — *Rust* Evanston, IL (September 2022 - Present)
Northwestern University

- CS 339: Database Systems (Fall 2024): Built a relational database management system:
  - 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)

- Web application for players to race each other in real-time to beat the game 2048. Developed minimax backtracking algorithm with alpha-beta pruning against which users can compete. (It's successfully beat the game!)

Languages C/C++, Java, LaTeX, Python, Rust, SQL, Typescript
Accolades 2024 ICPC Mid-Central Regional (3rd place), Qualified for 2024 ICPC NAC,
Award for Excellence in Mathematics by a First Year Student, National Merit Finalist

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