

Elliott Yoon

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Education	Northwestern University • Evanston, IL • <i>Expected June 2025</i> MS: Computer Science (4.0/4.0 GPA) BA: Mathematics (3.9/4.0 GPA) <ul style="list-style-type: none">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++, C#, Go (Golang), HTML/CSS, Javascript, Python, SQL Tools: Azure, Docker, Flask, Git, Heroku, React, Scikit-learn, Unix, Vim
Experience	Software Engineering Intern • May 2023 - Present • <u>Union Home Mortgage</u> • Strongsville, OH <ul style="list-style-type: none">Develop a full-stack application with C# and React.js that utilizes the Azure DevOps API to build and track development team metrics and display them on a customizable dashboard.Created lightweight daily-running batch jobs with C# that ingest data from drop-off folders and load the data into custom tables to minimize manual work.Learned and utilized UHM unit testing framework to verify code robustness and quality.Explored code design tradeoffs to learn best practices for scalability and maintainability.Led group of IT interns in effort to identify and analyze fixed and variable per-loan costs of over 100 third party applications used in the Union Home Mortgage technology stack. Undergraduate Researcher • June 2023 - Present • <u>Northwestern University</u> • Remote <ul style="list-style-type: none">Research in the field of spectral and scattering theory on quantum resonances for infinite edged graphs, focused on applications to quantum mechanics. Advised by Jared Wunsch. Data Engineering Intern • May 2022 - Aug 2022 • <u>Union Home Mortgage</u> • Strongsville, OH <ul style="list-style-type: none">Saved over 100 hours of work defining table fields for database migration efforts by creating SQL functions and stored procedures within Microsoft SQL Server and Azure Data Factory.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 • <u>Correlation One (DS4A)</u> • Remote <ul style="list-style-type: none">Used Python to conduct regression analysis (scikit-learn), create visualizations (matplotlib, seaborn, folium), and test for correlations (scipy) in aggregate data quantifying Amazon Rainforest deforestation and measures of Brazilian socio-economic health.Reported final analysis to > 1000 people via virtual presentation and interactive dashboard.
Projects	<i>Most projects are on GitHub: https://github.com/elliottyoon. All others available upon request.</i> Compiler • Jan 2023 - Mar 2023 • C++, Assembly <ul style="list-style-type: none">Built compiler in C++ that generates Intel x86 assembly code from modern C-based language.Implemented name binding, value encoding, array index error handling, and block generation in front-end; explicit control flow, instruction selection, and register allocation in back-end. 2048Racer • Jun 2022 - Aug 2022 • Javascript, Golang <ul style="list-style-type: none">Built full-stack 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 backend web server using Docker compose.Implemented 2048 AI using minimax + alpha-beta pruning, which successfully beat the game. Pineapple Pics • Mar 2022 - Jun 2022 • Javascript, Python, SQL <ul style="list-style-type: none">Developed full-stack Instagram clone with Flask, React, PostgreSQL, and Heroku.Built REST API endpoints to handle requests; authenticated users using cookies and JWT.