Nicholas Wentworth

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Education

The Pennsylvania State University   August 2019 – May 2023
B.S. in Computer Science
- Magna cum laude (3.96 GPA), Dean's List from Fall 2019 – Spring 2023

Projects

Capstone Team Visualization App | *React, Next.js, TypeScript, SQLite, HTML/CSS*
- Managed a team of 8 students through the development of an online team visualization and modification application, now an essential tool used by dozens of Penn State faculty members in the Senior Capstone team building process every semester.
- Interfaced the app with a locally hosted SQLite database through Prisma ORM.
- Conducted preliminary user interviews to understand faculty needs and incorporated findings in the strategic design of the app's user interface.

Rememo | *React, Next.js, TypeScript, HTML/CSS, Nginx*
- Developed a full-stack planner application using Next.js, enabling students to manage terms, courses, and tasks.
- Interfaced the custom-built frontend with a type-safe RPC-style backend API.
- Implemented secure OAuth2.0 authentication with support for various providers.
- Hosted the website on a virtual private server using Nginx as a proxy.

Chess Engine | *Rust*
- Built a Universal Chess Interface (UCI) compatible chess engine written from scratch in Rust.
- Applied an iterative deepening algorithm, transposition table, and move ordering strategy to efficiently search and evaluate positions.
- Implemented bitboards and magic number lookup tables to generate millions of possible move permutations per second.

Experience

Programming Tutor   June 2021 – Present
Independent
- Instructed students in a diverse range of programming languages and software, including C#, Unity, and Python, alongside technical topics such as Calculus, Linear Algebra, and Discrete Math.
- Conducted one-on-one online instruction, tailoring sessions to the unique learning strategies and experience levels of students, ranging from middle school level to working professionals.
- Established personalized learning plans and provided guidance for both brief one-time sessions and long-term students that aligned to their individual learning styles and goals.

Dishwasher   February 2018 – March 2020
St. Marco's Restaurant

Cashier   September 2018 – March 2019
Redner's Warehouse Markets

Skills

Programming Languages: JavaScript (React, Next.js, TypeScript), Rust, C (GCC, GDB), C#, Python
Software: Visual Studio Code, Unity, Microsoft Office
Technical Skills: Git, Debugging, Testing, Parallelization, Relational Databases