

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, HTML/CSS*

- Managed a team of 8 students through the development of an online team visualization and modification application, currently used internally by around 10 Penn State faculty members in the Senior Capstone team building process.
- Designed a secure backend to store, fetch, and mutate around 600 students' preferences for about 100 projects each, per semester.
- 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*

- Developed a modern and user-friendly full-stack planner application, allowing students to manage their terms, courses, and tasks throughout their academic career.
- Interfaced a cohesive and accessible user interface featuring custom-built cards, forms, and calendars with an RPC-style backend API, all secured through OAuth2.0 and JWT authentication.
- Setup custom hosting on a VPS (virtual private server) using Nginx as a proxy server and PM2 for process management.

Chess Engine | *Rust*

- Built a UCI (Universal Chess Interface) compatible chess engine written from-scratch in Rust.
- Extensively researched and implemented algorithms for move generation, position evaluation, and tree searching, allowing the engine to generate and search tens of millions of positions per second.
- Implemented unit and integration tests throughout the engine to ensure accurate move generation, including problematic edge cases.

Experience

Programming Tutor

June 2021 – Present

Independent

- Instructed around 100 students in a diverse range of programming languages, including JavaScript, React, Python, Rust, and C#.
- Conducted one-on-one virtual instruction for students, ranging from middle school students to working with professionals on large-scale production applications.
- Mentored and established personalized learning plans for long-term students and provided expertise in one-time sessions, tailoring lessons to the unique learning styles for each student.

Skills

Programming Languages: JavaScript (TypeScript, React, Next.js), Python, Rust, C#

Software & Tools: Git, VS Code, Nginx, Tailwind, Figma, Unity Engine

Technical Skills: Testing, Relational Databases, REST APIs, Hosting, Debugging, Parallelization