

William Roche

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EDUCATION

New York University

New York, NY

Bachelor of Science in Computer Science, Minor in Mathematics

September 2025 - May 2027

GPA: 4.0 | Dean's List (1/1 Semester)

The College Of New Jersey

Ewing, NJ

Major in Computer Science, Minor in Mathematics

September 2023 - May 2025 (Transferred)

GPA: 3.92 | Dean's List (4/4 Semesters) | Upsilon Pi Epsilon Honor Society

EXPERIENCE

Quantum Hardware Research Intern

New York, NY

NYU Center for Quantum Information Physics

June 2025 – August 2025

- Fabricated a vertical graphene Josephson junction for superconducting qubits using standard nanofabrication techniques
- Mentored 2 high school students building a cost-effective (\$250) magnetic levitation system to model trapped ion qubits

Blockchain & Digital Assets Research Assistant

Ewing, NJ

The College of New Jersey

September 2024 – May 2025

- Researched distributed ledger technologies, focusing on consensus mechanisms (Proof-of-Work, Proof-of-Stake, etc)
- Assessed the scalability potential of the top 5 cryptocurrency tokens via analysis of their blockchain security protocols

Social Media Growth Consultant

Freelance Consulting Services

January 2024 – May 2025

- Built a personal brand with 3M+ views, 22K followers, and \$25,000+ in revenue via algorithm-driven growth strategies
- Mentored 7 small-scale creators on TikTok Live, driving a 38% average revenue increase through heightened viewership

Software Engineer

Ewing, NJ

The College of New Jersey Library Application

September 2023 – May 2024

- Created a cross-platform PWA to improve campus resource access for 7,000+ students by modifying TCNJ Library App
- Aimed to improve student efficiency by tracking availability of 27 study rooms via MySQL/PHP and motion sensor data

PROJECTS

Songify | songify-wjr.vercel.app | *Next.js, React.js, Cohere API, TMDB API, Tailwind CSS, Vercel*

- Built a song recommendation app based on movies with a Next.js/React front-end, integrating Cohere and TMDB APIs
- Applied REST API principles for data exchange, styled the UI with Tailwind CSS v4.0, and deployed the app on Vercel

Live Stock Tracker | stocktracker-z7er.onrender.com | *FastAPI, WebSockets, Chart.js, Docker Compose, Render*

- Engineered a live stock tracker with a FastAPI backend, WebSocket protocols, and a responsive frontend for stock info
- Containerized with Docker Compose and deployed on Render for scalable hosting and live financial market monitoring

Custom Linux Shell | github.com/WillRoche2587/linuxShell | *C*

- Built a Unix-like shell supporting command history, piping, I/O redirection, process execution, and Linux commands
- Implemented process management, directory management, and IPC with system calls (fork, execvp, pipe, chdir)

Personal Portfolio | WillRoche2587.Github.io | *HTML, CSS, JavaScript, Three.js*

- Developed a web portfolio using HTML, CSS, and JavaScript to showcase academic and personal achievements

SKILLS

Programming Languages: Python, C++, C, Java, SQL, JavaScript, TypeScript, MATLAB

Dev Tools: HTML, CSS, Git, Docker, FastAPI, Node.js, Next.js, React, Tailwind CSS

Platforms & Methodologies: Windows, macOS, Linux, REST APIs, Agile, Waterfall, CI/CD, Vercel, Render, Jira, Slack

RELEVANT COURSEWORK

Computer Science: Object Oriented Programming, Data Structures, Discrete Structures, Computer Architecture, Introduction to Databases, Analysis and Implementation of Algorithms, Operating Systems

Mathematics: Calculus, Mathematical Proof Writing, Advanced Linear Algebra, Probability and Statistics