

Atharv Patil

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Education

The Pennsylvania State University - UP
B.S. in COMPUTER SCIENCE

Aug 2021 - May 2025

Courses: Artificial Intelligence, Distributed Systems, Operating Systems, DBMS, DSA, OOP, Theory of Computation, Systems Programming

Work Experience

[Greenstand](#) - [Link to my PRs](#)

Software Engineer Volunteer

Remote

Aug 2025 - present

- Led Behavioral Driven Development (**BDD**) infrastructure implementation for Greenstand's TreeTracker Wallet App by planning milestones with VP of Engineering, creating/managing GitHub issues, and driving incremental delivery
- Integrated **WebdriverIO** + **Cucumber** in **TypeScript** for end-to-end tests with parallel runs, video/image capture, and readable HTML reports
- Built step definitions that drive the real UI, hit backend APIs, and assert user-visible outcomes, validating the full test flow for all current features end-to-end
- Consolidated test artifacts by embedding per-scenario videos and failing-step screenshots directly in the Cucumber HTML report, speeding triage and creating a single source of truth

Amphenol Corp.

Software Engineer Intern

Nashua, NH

Jun 2024 - Aug 2024

- Developed a **C++** CLI to communicate with **I2C** chips enabling accurate, production-grade thermal testing for high-speed AWS server cables
- Designed modular wrapper functions based on chip datasheets, allowing full feature access, robust control, and future scalability
- Integrated thermocouple amplifier sensor data into testing workflows by reading and modifying register-level firmware configurations for I2C devices and debugging communication issues during development
- Built test environment using **PWM** logic to emulate real testing conditions for empirical analysis prior to thermostream system integration
- Implemented a custom **PID** control algorithm, reducing temperature deviation from $\pm 7^{\circ}\text{C}$ to $\pm 0.5^{\circ}\text{C}$ and surpassing the customer's strict $\pm 1^{\circ}\text{C}$ accuracy requirement
- Collaborated with mechanical engineers in R&D to validate software-hardware integration and deliver an approved testing system

Academic Excellence Center (AEC), Penn State

Computer Science Tutor

State College, PA

Oct 2023 - May 2025

- Led exam reviews and tutoring sessions in DSA, OOP, and systems programming (**Java, C, Python**) for 120+ Computer Science students

Open Source Contributions

[OpenHands Contributor](#) - [Link to my PRs](#)

Aug 2025 - Present

- Resolved a prompt-box resize bug that caused overflow on long messages by refactoring height measurement logic, adding tolerance handling, and debouncing resize events in **React/TypeScript** to ensure consistent multi-line behavior across browsers

Projects

[AI Portfolio Website](#), LLM Application

May 2025 - Jul 2025

- Built an AI-powered personal website using **Next.js** and deployed on **Vercel**, featuring a ChatGPT-style chatbot powered by **OpenAI's GPT-4o completions API** to answer recruiter questions, alongside static pages for career overview, resume, and contact form
- Generated vector embeddings using **OpenAI's API** and implemented a schema-aware RAG pipeline for semantic retrieval of context chunks
- Implemented dynamic top-k chunk retrieval based on query intent and similarity thresholds, with fallback logic to handle out-of-scope queries and tuned the system prompt to define assistant behavior, tone, Markdown formatting, and factual accuracy constraints
- Developed a fully responsive chat interface using **React.js** and **CSS Modules** with precise layout control and real-time UI state updates with streaming UI implementation via a typewriter effect reducing user-perceived latency

NittanyBusiness, Full-Stack Development

Jan 2025 - Apr 2025

- Designed and developed a B2B e-commerce procurement platform for SMEs as my capstone project, building both frontend and backend with **Next.js** to handle user authentication, product listings, and order management
- Engineered **RESTful APIs** with fully normalized **MySQL** schema and wrote complex **SQL** queries to aggregate order, inventory, and user data

Peer-to-Peer File Sharing System, Distributed Systems

Sep 2024 - Nov 2024

- Designed a P2P file-sharing network with a central server and multiple peers in **Python**, enabling efficient, decentralized file distribution
- Developed a chunk-based system to split large files and allow simultaneous downloads from multiple peers, significantly improving download speed, with multi-threading to handle parallel connections

Technical Skills

AI/LLM Tools: OpenAI API, Cursor, Github Copilot, Prompt Engineering, OpenHands

Languages: Python, C++, C, Java, JavaScript, TypeScript, SQL, Verilog

Technologies: React.js, Next.js, Node.js, Express.js, MySQL, MongoDB, Git, HTML, CSS, I2C