# Ayug Poudel

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## Education

**University of North Carolina at Chapel Hill** — Chapel Hill, NC

*B.S. Computer Science and Statistics, Double Major* | ***GPA: 3.824*** — *May 2028*

**Relevant Coursework:** Data Structures & Analysis, Systems Programming, Computer Organization, Software Engineering, Models of Languages & Computation, Methods of Data Science, Linear Algebra for Applications

## Experience

**Full Stack Software Engineering Intern** — Durham, NC

*Fidelity Investments* — *June 2026 – Aug. 2026*

- Architected an **Angular/TypeScript developer hub** consolidating **40+ versioned AI prototypes**, cutting discovery time from **3–5 minutes to under 30 seconds** through unified search and access.
- Integrated application and version-resolution APIs to replace hardcoded prototype links, **reducing a fragmented 4-step discovery process to 2 steps**.
- Implemented authenticated **CRUD and version-management workflows**, enabling business-unit users to publish and retrieve prototypes without engineering intervention.

**Computational Materials Research Assistant** — Remote

*Fayetteville State University* — *June 2023 – June 2024*

- Engineered **Python/NumPy/Pandas pipelines** to convert Quantum ESPRESSO simulation outputs into analysis-ready datasets and reproducible visualizations for materials research.
- Automated **5 simulation-analysis workflows** covering band structures, density-of-states, Fermi levels, charge densities, and structural energies, replacing repetitive post-processing steps.
- Compared **$Sc_2C$ MXenes** across atomic configurations and **3 surface terminations** (O, F, OH), identifying differences in structural stability and electronic behavior.

**Backend Developer** — Chapel Hill, NC

*App Team Carolina – Porch* — *Sept. 2026 – Present*

- Developed **backend APIs and data models** for Porch, giving its iOS client a structured way to access neighborhood events, resources, and community information.
- Implemented **server-side workflows and shared data contracts** with iOS, design, and product teammates, connecting client features to centralized application data.

## Projects

**TAB – AI-Assisted Group Expense Platform** | *TypeScript, React, Bun, Photon, Gemini API*

- Built a **React/TypeScript and Bun expense-sharing app** that centralizes group purchases, participant balances, and transaction histories in a mobile-first interface.
- Integrated **Photon agents and the Gemini API** into receipt-processing workflows to extract purchase details and support faster shared-expense entry.
- Connected a chat-inspired group interface to **backend-managed expense records**, keeping participant balances and group totals consistent with stored transactions.

**GradeSense – AI-Assisted Regrade Platform** | *Angular, FastAPI, PostgreSQL, SQLModel, OpenAI*

- Engineered an **Angular/FastAPI regrading platform** supporting **3 roles** (students, TAs, instructors) across appeal submission, review, feedback, and approval.
- Designed **FastAPI services and PostgreSQL/SQLModel schemas** to centralize exams, submissions, scores, and regrade requests across the appeal lifecycle.
- Integrated **LLM-based appeal classification**, role-based access controls, and API tests to organize appeals, protect grading actions, and verify service behavior.

## Accomplishments

**1st Place – Fidelity FidHacks 2025** — North Carolina

*EmpowHER* | *Devpost* — *2025*

- Co-developed **EmpowHER**, an AI-powered career platform, winning **1st Place** at an invite-only Fidelity hackathon with **48 selected participants**.
- Built **4 features**—AI interview practice, resume scoring, career resources, and event discovery—using JavaScript, REST APIs, and open-source AI tools.

## Technical Skills

**Languages:** Java, Python, JavaScript, TypeScript, HTML/CSS
**Frameworks/Libraries:** Angular, React, FastAPI, Spring Boot, Bun, SQLModel, SQLAlchemy, Pandas, NumPy, Matplotlib, RxJS
**Databases/Cloud:** PostgreSQL, MySQL, Azure Blob Storage
**Tools/Platforms:** Git, Docker, iOS Development, Gemini API, Photon, Jupyter, Quantum ESPRESSO
**Testing:** Playwright, Pytest, JUnit, Mockito