

Lucas Hope

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Education

Stevens Institute of Technology

BS in Computer Science (GPA: 3.7)

Hoboken, NJ

September 2021 – December 2024

Experience

Jersey Mike's Subs

Wall, NJ

AI Application Engineer

May 2025 – Present

- Built a natural language sales analytics system that converts business questions into validated, schema-driven execution pipelines using structured LLM outputs.
- Implemented a deterministic query execution framework supporting filtering, grouping, aggregation, and sorting across the dataset, with strict validation of dimensions and metrics.
- Rapidly prototyped and presented MVP analytics tools to business stakeholders, iterating on feedback to align technical capabilities with business needs.

Data Engineering Intern

Summer 2023, 2024

- Engineered Playwright-based automation to collect competitor pricing across key markets, implementing strategies to navigate anti-bot protections and eliminating 4 days of manual data collection per month.
- Designed data ingestion workflows to normalize and store scraped pricing data in PostgreSQL for downstream analytics.
- Prototyped LLM-assisted insight generation workflows to analyze pricing trends and support competitive strategy reporting.

Projects

Web3 Security Portfolio

- Analyzed smart contract vulnerabilities including reentrancy, flash loan exploits, and access control flaws across DeFi protocols.
- Produced detailed exploit walkthroughs and mitigation strategies based on competitive audits and security challenges.

ExtendedSQL

- Designed and implemented a SQL-like query engine to support complex aggregation across dynamic grouping dimensions, including parsing, execution planning, and evaluation logic.

Skills and Technologies

Programming Languages: Python, SQL, TypeScript, JavaScript, Solidity, Rust, Go

Frameworks & Tools: FastAPI, Flask, React, LangGraph, Pydantic, Foundry, OpenWebUI, LaTeX, RAG Pipelines

Data & Infrastructure: PostgreSQL, AWS, Docker, Git, Linux, Vector Databases

Leadership

President of Alpha Sigma Phi – Alpha Tau Chapter

- Led a 40-member organization and directed a 10-officer executive board.
- Managed chapter operations, strategic planning, and coordination with university administration and national leadership.