Jack Wember

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Education

Indiana University Bloomington **Expected Graduation: May 2027**

Bachelor of Computer Science – Specializations: Software Engineering, AI ***GPA: 3.7/4.0 — Dean's List***

Minors: Data Science, Informatics

Courses: Applied Algorithms, Data Structures, Discrete Structures, Intro to AI, Databases, Software Engineering

Work Experience

FinTech @ IU **September 2026 – Present**

Tech Committee Software Engineer *Bloomington, Indiana*

- Contributing to the club's technical infrastructure, including the website, internal tooling, and financial simulators.
- Collaborating with a student team to build and maintain tools supporting club operations and member-facing platforms.

Internship – Wember Inc. **June 2026 – August 2026**

Software Engineering Intern *Bull Valley, Illinois*

- Built automated email reporting system using Claude actions with the Microsoft 365 connector, crafting targeted prompts to search and extract data from company files; automated report generation reduced time spent by an estimated **3600** hours annually.
- Contributed to development and maintenance of company website using HTML/CSS/JS supporting customer-facing content featuring **350+** completed projects.

Research

Research – Da Yan's Lab — Website **September 2026 – Present**

Assistant Researcher/Undergrad Researcher *Bloomington, Indiana*

- Researching graph database systems and analytics tooling, focusing on database development, performance benchmarking, and data engineering for graph-native storage.
- Collaborating with a multi-student team on agentic AI approaches that translate natural-language queries into graph analysis workflows.

Research – Dr. Weihua Guan's Lab — Website **September 2025 – January 2026**

Assistant Researcher/Undergrad Researcher *Bloomington, Indiana*

- Worked on an Nvidia Jetson-based mobile DNA sequencer, implementing and optimizing MinKNOW/Dorado GPU pipelines for real-time nanopore sequencing, and presented findings to **150+** attendees including university faculty.

Projects

Converge | *Source Code* | *Live Demo* **JavaScript | Node.js | WebSockets**

- Built a real-time collaborative text editor in JavaScript on a custom RGA CRDT and WebSocket relay, using Lamport-timestamped character IDs so offline edits merge cleanly on reconnect and undo is scoped to operation IDs.
- Verified correctness with randomized convergence fuzzing across 61 seeds with 3 and 5 replicas, plus end-to-end tests over real sockets.

Alpaca Trader | *Source Code* **Python | Alpaca API | SQLite**

- Built an automated Python trading bot on the Alpaca API for equities and crypto, running on a live paper-trading account with RSI/MACD/SMA signal scoring, ATR-based stops and position sizing, and a SQLite ledger reconciled against broker positions on restart.
- Backtested on one year of 5-minute bars across 86 symbols, producing 284 trades with an 8% max drawdown.

Technical Skills

Languages: Python, Java, C, SQL, JavaScript, HTML/CSS, Kotlin, Lua, Bash/Shell scripting

Developer Tools: Docker, Figma, Git/GitHub, Linux/Unix, Venv/VM

Libraries/Frameworks: Neo4j, TigerGraph, React, PostgreSQL, SQLite, Node.js, PyTorch, TailwindCSS, NumPy, OpenCV

Leadership and Activities

Campus Involvement: FinTech Club — Computer Science Club

Interests: Machine Learning, Retro Electronics, Stock Market, Hiking, Skiing, Rock Climbing, Running