

Brayden Abo

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EDUCATION

Stevens Institute of Technology

Bachelor of Science in Computer Science

Relevant Coursework: Data Structures, Algorithms, Operating Systems, Computer Architecture and Organization

Hoboken, NJ

Expected December 2026

EXPERIENCE

Incoming Software Engineer Intern

Walmart Global Tech

- Incoming Software Engineering Intern for Summer 2026, in Sunnyvale, CA.

June 2026 – August 2026

Sunnyvale, CA

Undergraduate Researcher

Stevens Institute of Technology, Health + AI Lab

- Research within Stevens's Health and AI Lab, under the direction of Professor Kleinberg, focusing on Plato, an interactive, multimodal chatbot designed for real-world meal logging and nutritional analysis.
- Developed a local Vision Language Model (VLM) pipeline with Qwen2.5-VL and Llama3.2, to enable zero-shot ingredient deconstruction of complex, multi-layered food items, which improved Plato's F1-score by 9%.
- Architected a bidirectional multimodal mapping system using open weight models to deconstruct complex meal images into atomic ingredients and re-associate ingredient clusters with canonical parent entities.

September 2025 – Present

Hoboken, NJ

Software Engineer Intern

Verizon

- Developed a GraphRAG pipeline to enhance LLM query performance on Verizon's network database, achieving a 70-80% reduction in query time.
- Integrated Model Context Protocol (MCP) into an AI-agent framework, enabling standardized, secure access for agents to diverse data sources and tools.
- Built an AI-agent framework on a structured knowledge graph with Python and Llama3 to help network engineers diagnose topology intermittencies and speed up network decommissioning projects

June 2025 – August 2025

Basking Ridge, NJ

PROJECTS

Recipe Hub | *Python, Flask, Docker, HTML, TailwindCSS*

November 2025 - January 2026

- Architected a self-hosted recipe management system using Flask, implementing a custom parser for the Cooklang markup language to automate ingredient and cookware extraction.
- Integrated Gemini-Flash to automatically convert unstructured third-party web content into the standardized Cooklang format for recipe imports.
- Containerized the application using Docker and Docker Compose, streamlining deployment for private home-server environments and Raspberry Pi hardware.

Binning Heap Allocator | *C*

November 2025 - December 2025

- Built a high-performance C-based memory allocator utilizing segregated free lists (binning) to provide O(1) best-case allocation for 8 distinct size classes (32B to 4KB).
- Implemented immediate coalescing via boundary tags and address arithmetic, enabling O(1) merging of adjacent free chunks and significantly reducing external fragmentation.
- Architected a "Best-Fit" allocation strategy with chunk-splitting logic to maximize heap utilization and minimize wasted space during small-block requests.

Load Balancer | *Go*

March 2025 - June 2025

- Developed a concurrent Layer 7 load balancer in Go, utilizing Goroutines and Channels to manage asynchronous traffic distribution across backend server clusters.
- Implemented a pluggable scheduling interface supporting multiple load-balancing strategies, including Round Robin and Least Connections, to optimize traffic distribution across server clusters.

TECHNICAL SKILLS

Languages: Python, Java, C++, C, R, SQL, Assembly, HTML/CSS

Frameworks: Flask, React, Node.js, JUnit, Django

Developer Tools: Git, Docker, Visual Studio Code, PyCharm, IntelliJ, Eclipse, Logism-Evolution

Libraries: LangChain, Matplotlib, NumPy, Pandas, Scikit-Learn, Neo4J