

AHMAD EL-FAKHARANY

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Experience

Snapstack

Founder

Canton, MI

Jul 2026 – Present

- Building a full-stack platform with web and iOS interfaces to help time-conscious individuals stay informed on what they care about as efficiently as possible. Managing every aspect of the product, from engineering to design to marketing/sales.

WebstaurantStore

Software Engineering Intern

Lititz, PA (Remote)

Jan 2026 – Mar 2026

- Refactored legacy C# code in ASP.NET Core REST APIs by replacing MediatR with a more streamlined API endpoint request handling method, reducing resource overhead and improving maintainability through unit testing and peer code review collaboration.
- Completed full development lifecycle on a tech debt ticket using Azure DevOps, Git, and ASP.NET Core, from initial PR submission through QA testing and production deployment across TEST and PROD environments.
- Developed proficiency in Agile workflows, C# fundamentals, and debugging techniques while working on the Catalog. Authoring team's content management tools, applying knowledge of clean code principles and RESTful API design.

Projects

Multi-Level Route Planning Engine | C++

- Engineered a C++ command-line navigation engine to find escape routes across multi-level station grids with walls and elevator transitions, producing deterministic paths in map or coordinate-list formats.
- Architected a dual-format parser for both dense map and sparse coordinate inputs, and enforced strict validation of routing mode, output mode, symbols, and bounds to fail fast on invalid data.
- Optimized traversal performance by preallocating a 3D state grid, tracking discovered/predecessor metadata for constant-time backtracking, and exiting immediately on goal discovery, yielding sub-second large-case runtimes.

Homelab | Linux, Docker

- Architected and deployed a full self-hosted server network on repurposed hardware, standardizing the stack with Linux, containerization (Docker/Docker Compose), and reliable storage layout so services could run consistently.
- Built a resilient, automated backup-and-remote-access setup using Tailscale plus nightly rsync-over-SSH, securing access by keeping services off direct public exposure and controlling entry points.

Real-Time Gross Settlement Simulator | C++

- Engineered a C++ banking simulator using a priority queue to schedule and execute wire transfers in chronological order, ensuring correct account balances across all users.
- Built a multi-structure data pipeline with hash maps and sets for O(1) user lookups and session-based fraud detection, with fee calculation and loyalty discounts applied at execution time.
- Implemented a query engine supporting transaction listing, revenue aggregation, customer history, and daily summaries over a completed transaction log.

Autodidact | TypeScript, Supabase, React, Vite

- Spearheaded the end-to-end development of an AI-driven learning platform, coordinating architecture decisions and integrating Fetch.ai's ASI:One LLM API to deliver personalized, modular educational roadmaps.
- Collaborated with teammates in architecting and implementing seamless Supabase integration for dynamic storage and retrieval of learning modules and quizzes, ensuring robust data management and scalability.

Education

University of Michigan

B.S. in Cognitive Science (Computation Track), Computer Science (minor)

Ann Arbor, MI

Expected April 2027

Selected Courses: Data Structures and Algorithms, Database Systems, Machine Learning for NLP, Linux Tools

Skills

Languages: C, C++, C#, Python, SQL, Bash/Zsh, JavaScript, HTML/CSS

Tools/Technologies: Git, .NET, Docker, Linux/Unix