

Nhan Nguyen

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EDUCATION

Gettysburg College

Gettysburg, PA

Bachelor of Science in Computer Science, Minor in Business | GPA: 3.33/4.00

May 2027

Coursework: Data Structures & Algorithms, Object-Oriented Programming, Computer Networks, Operating Systems, Database Systems, Theory of Computation, Advanced Systems Design, Linear Algebra

EXPERIENCE

KB Securities

Ho Chi Minh City, Vietnam

Software Engineer Intern

Nov. 2025 – Aug. 2026

- Reduced market-data bandwidth for a live trading terminal by **84%** through differential **WebSocket** patching and upstream requests by **98%** via 50-symbol batching; cached historical data in **Redis** and optimized indexed **PostgreSQL** queries across **100,000+** records.
- Engineered a real-time trading terminal for the **KB Financial Group** covered-warrant desk, tracking Vietnam's **30** largest-cap equities and **300+** covered warrants with **Node.js**, **TypeScript**, **WebSockets**, **Redis**, and **PostgreSQL**; modeled pricing, risk, and P&L across Black-Scholes outputs, Greeks, and inventory exposure.
- Built and launched **KB Securities CW Portal**, KBSV's official client-facing CW product, across a **two-VM architecture**, separating **Next.js**/**Nginx** frontend from containerized **FastAPI**, **Kafka**, and **PostgreSQL** backend; shipped **REST** APIs for warrant screening, calculators, and issuer analytics with pytest coverage in **CI**.
- Built the **n8n/SQL** data layer backing both the trading terminal and CW Portal, ingesting market-data and corporate-action feeds with deduplication, normalization, and adjusted-price calculations; maintained **5 years** of history across **100** underlying symbols plus intraday covered-warrant pricing as a queryable store for research.

Finbud AI

Chicago, IL

Software Engineer Intern

Apr. 2025 – Jul. 2025

- Optimized LLM request flows through **asynchronous I/O**, prompt compression, and retrieval caching, cutting production end-to-end latency by **50%** and eliminating redundant API calls.
- Implemented a financial **RAG** pipeline using **LangChain**, **pgvector**, and **PostgreSQL**, handling document ingestion, chunking, vector retrieval, and LLM context assembly for a production analytics platform.
- Containerized backend services with **Docker** and configured **GitHub Actions CI/CD** to run automated tests, standardizing environments across development and QA.

eSmart Solutions Agency

Saint Paul, MN

Software Engineer Intern

Feb. 2025 – Apr. 2025

- Developed a multi-model AI content platform using **Vue.js**, **Node.js**, **FastAPI**, **DeepSeek**, and **GPT-4**, parsing user input into keywords, tone, intent, and metadata for platform-specific outputs.
- Automated a multi-stage content workflow combining extracted search intent, external **SEO** scoring, and iterative LLM refinement until a quality threshold was met, producing **100+** articles without manual rewriting.
- Redesigned content-management workflows and centralized shared application state with **Pinia**, simplifying navigation and state synchronization across the user dashboard.

PROJECTS

CW Research Terminal | *React, TypeScript, FastAPI, PostgreSQL, Redis, OpenRouter*

[GitHub](#) | [Demo](#)

- Streamed **vnstock** quotes for **100+** warrants over **FastAPI/WebSockets** into **Redis** state, serving a **React/TypeScript** terminal deployed on **Vercel**; built an **OpenRouter** tool-calling assistant grounded in live quotes, sentiment analytics, and **PostgreSQL** price history, with visible tool traces and non-advisory guardrails.

ITCH Feed Handler | *C++20, Nasdaq TotalView-ITCH 5.0, CMake, CTest*

[GitHub](#)

- Built a **C++20** Nasdaq **ITCH 5.0** feed handler and **L2 order-book** reconstructor, replaying a **368M-message**, **11.2 GB** exchange session to rebuild **8,695** per-symbol books at **32.2M msg/s** parsing (**31 ns/message**) and **1.68M msg/s** end-to-end, verified by 24 correctness scenarios and **UBSan**.

TECHNICAL SKILLS

Languages: Python, C++20, TypeScript, JavaScript, Java, C, SQL

Backend & Data: FastAPI, Node.js, Flask, PostgreSQL, Redis, Kafka, pgvector, MySQL, MongoDB, LangChain

Frontend & Infra: React, Next.js, Vue.js, Docker, Nginx, GitHub Actions, CMake, pytest, Git, n8n

Concepts: REST APIs, WebSockets, CI/CD, ETL, Caching, Real-Time Systems