

# NGUYEN (NOAH) PHAM

Manchester, United Kingdom

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## Education

### University of Manchester

BSc. (Hons) Computer Science

Graduating in Jun 2027

First Class Honours, Expected

- Relevant Coursework: Software Engineering, Algorithms and Data Structures, Data Science, Operating Systems, Database Systems, Artificial Intelligence, Computer Engineering & Architecture, Discrete Mathematics.
- Activities: Student Representative, Google Developer Student Club, Robotics Society, Manchester Trading Society.

## Experience

### Software Developer Intern [🔗](#)

Ping Technology Labs

Oct 2025 – Present

Manchester, United Kingdom

- Spearheaded the end-to-end full-stack development of DNS Directory: async **Python** engine across **20,000+** servers globally, cutting API response time by **75%** via caching with **Next.js** SSG frontend, used by **10,000+** users.
- Engineered a fault-tolerant async communication microservice with **Python asyncio** worker pool dispatching email, SMS, Slack, and webhook, sustaining **99.99%** delivery reliability with crash-recovery sweeper.
- Extended a **Flask/PostgreSQL** API with recursive DNS testing and TTL caching; built a partial-index-optimized data-retention microservice archiving **50k+** records per cycle, reducing table size by **~35%**.

### Digital Design Web Developer [🔗](#)

University of Manchester Students' Union — Part-time

Aug 2025 – Present

Manchester, United Kingdom

- Developed and designed **30+** high-traffic web pages for the Students' Union platform, handling **150,000+** monthly page views and improving user engagement by **50%** through intuitive UI/UX design and seamless navigation flows.
- Built a full-stack web application with **React, TypeScript, Node.js, Express.js, AirTable** and **Mapbox GL** to provide all available campus utility locations and mapping for all students and faculty staff.

## Selected Projects

### SpeakWisely [🔗](#) | *Next.js, TypeScript, PostgreSQL, Supabase*

February 2025

- Built and launched a real-time multi-agent conversational AI application using **Next.js** and **Supabase** to simulate immersive IELTS exam environments, scaling the platform to support **300+** active users.
- Architected a **deterministic Finite State Machine** to manage agent conversational flows, enforcing strict IELTS testing protocols and reducing logic drift and hallucinations by **40%** compared to non-deterministic prompt chaining.

### Multi-Agent Project Management System [🔗](#) | *Next.js, TypeScript, RAG, Python, Redis*

November 2025

- Architected a **multi-agent AI backend** using **RAG modeling** and a **fine-tuned GPT-4.1 Nano** to autonomously manage and delegate project tasks, winning **1st Place** out of 100+ teams at the UCL AgentVerse Hackathon.
- Engineered an agentic digital twin data pipeline with **Python** and **Redis** to model individual team member skills and availability, enabling the core system to make intelligent, context-aware assignments.

### Multi-Agent Dementia Care Platform [🔗](#) | *LangGraph, Next.js, TypeScript, Python*

October 2025

- Developed a multi-agent system using **LangGraph** with specialised agents for memory and health monitoring with a centralised memory layer to orchestrate patient reminders and task management, winning 2 1st Place awards.

### Real-Time Study Space Finder [🔗](#) | *Next.js, React, Typescript, MongoDB, Mapbox GL*

October 2024

- Developed a full-stack interactive mapping application with **Next.js, React, TypeScript, MongoDB** and **Mapbox GL** to visualise real-time study space availability, attracting over **500 monthly active users**.
- Architected a server-less back-end using **Next.js API routes** and **MongoDB** to serve geo-spatial data and power a proximity and amenity filtering, slashing student search time by an estimated **90%**.

## Technical Skills

**Languages:** Python, TypeScript, JavaScript, Java, C++, SQL, Swift, HTML/CSS, Verilog, Assembly, C, PHP.

**Frameworks & Libraries:** Next.js, React.js, Node.js, Tailwind CSS, Framer Motion, Qt, PartyKit.

**Database and BaaS:** PostgreSQL, Supabase, MongoDB, MySQL, NoSQL, SQLite, Firebase, Redis.

**Developer Tools & Platforms:** Docker, Git, GitHub, GitLab, Vercel, Linux, CI/CD, Agile, Scrum, L<sup>A</sup>T<sub>E</sub>X.