

TRAN KHOI NGUYEN (NOAH) PHAM

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Education

University of Manchester

BSc. (Hons) Computer Science

Graduating in 2027

Manchester, United Kingdom

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

Experience

Full Stack Software Engineer

SpeakWisely

Dec 2024 – Present

Manchester, United Kingdom

- Led the end-to-end product lifecycle development of a full-stack AI-powered web application using **Next.js**, **TypeScript**, and **Supabase**, acquired and currently supporting **200+ active users** for IELTS speaking practice.
- Architected a **real-time multi-agent conversational AI**, using a **state machine** and **context engineering** to orchestrate seamless handoffs between **specialized agents** for a dynamic, multi-stage test simulation.
- Engineered an automated analysis pipeline with a secure Supabase (PostgreSQL) backend, integrating **Whisper API** and **LLM inference** to deliver feedback in **under 5 seconds** while ensuring data privacy with **Row Level Security**.

Electronics and Software Engineer

Hyperloop Manchester

Sep 2023 – Jun 2024

Manchester, United Kingdom

- Optimised a multi-panel control GUI in **C++** and **Qt** to visualise mission-critical data, integrating **5+** real-time streams including GPS, live video, and 3D heat maps to reduce system diagnostic time by an estimated **50%**.
- Implemented a low-latency communication protocol that achieved a **99.9%** data packet success rate at **under 10ms** end-to-end latency, ensuring real-time telemetry between pod microcontrollers and the control station.

Projects

Race the Ages | *Next.js, TypeScript, React, PartyKit, Tailwind CSS, Framer Motion*

November 2024

- Developed a real-time multiplayer game using **Next.js**, **TypeScript**, and **PartyKit**, achieving game state synchronization with **<100ms** latency to deliver a fully functional prototype and winning **2nd Place Overall**.

StudyMapper | *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%**.

LeetCoach | *Next.js, TypeScript, Python, Docker, Tailwind CSS*

April 2024

- Built a full-stack **AI** coaching platform with a **Next.js** front-end and a secure **Python/Docker** back-end to deliver real-time, **AI-driven** feedback from the **Gemini API** within a sandboxed execution environment.
- Integrated a low latency voice-driven interface by orchestrating a real-time **transcription API** and the **Neuphonic API** for text-to-speech, creating a **100%** hands-free user experience to improve accessibility for auditory learners.

Omni | *Next.js, React, TypeScript, Polkadot, AI, Hardhat, Solidity*

May 2025

- Engineered an **AI-powered DeFi** strategy engine with **Next.js**, implementing **Monte Carlo simulations** to generate personalised, risk-adjusted portfolios and reducing user research time.
- Architected a full-stack **dApp** on the **Polkadot network**, deploying **Solidity smart contracts** via **Hardhat** and integrating the **Polkadot API** to create a secure workflow from wallet connection to on-chain transaction signing.

Technical Skills

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

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

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

Developer Tools & Platforms: Docker, Git, GitHub, GitLab, Vercel, Linux, Windows, CI/CD, Agile, Scrum, L^AT_EX.