TRAN KHOI NGUYEN (NOAH) PHAM

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Education

University of Manchester — **Graduating in 2027**

BSc. (Hons) Computer Science — *Manchester, United Kingdom*

- Relevant Coursework: Data Science, Operating System, Computer Engineering & Architecture, Discrete Mathematics.
- Activities: Student Representative, Google Developer Student Club, Hyperloop Manchester, Manchester Robotics Society, GreatUniHack 23', Hackchester - Cyber Security, Manchester Trading Society and MUDSS.

Experience

Full Stack Software Engineer — **Dec 2024 – Present**

SpeakWisely — *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.
- Engineered an automated analysis pipeline integrating **OpenAI's Whisper API** for transcription and a **low latency LLM inference** for evaluation, delivering detailed feedback on user-submitted audio in **under 8 seconds**.
- Implemented a secure, multi-tenant backend with **Supabase** and **PostgreSQL**, utilising **Row Level Security (RLS)** to ensure strict data privacy and integrity for all user practice sessions and performance analytics.
- Designed and developed a responsive front-end with **Tailwind CSS** and **Framer Motion**, creating an engaging test simulation environment with real-time audio visualisation that increased user immersion and practice effectiveness.

Electronics and Software Engineer — **Sep 2023 – Jun 2024**

Hyperloop Manchester — *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 **40%**.
- Implemented a low-latency communication protocol between pod micro-controllers and the control station.
- Overhauled the Hyperloop's website using **HTML**, **CSS**, and **JavaScript**, modernizing the design and responsiveness.

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, 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, SQLite, Firebase.
Developer Tools & Platforms: Docker, Git, GitHub, GitLab, Vercel, Linux, Windows, LaTeX.