Ngoc Tram Tran

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PROFILE

Backend-focused Software Engineering graduate from RMIT University with experience building API-driven systems, distributed applications, and data-centric platforms. Strong foundation in backend architecture, databases, and service integration, with hands-on experience across Python and Java-based systems. Interest in building reliable, scalable backend services that support complex business workflows.

TECHNICAL SKILLS

Programming languages: C, C++, Java, Python, JavaScript, TypeScript
Frameworks & Tools: React, Node.js, Express, Chakra UI, Spring Boot, Maven, JPA, Docker, Git, Unity, YOLOv8, PyTorch, TensorFlow, OpenCV, Flask, Flask-SocketIO
Databases & APIs: MySQL, Cloud MySQL, GraphQL, JSON, Microsoft Power Platform

PROJECTS & EXTRACURRICULAR

Classroom IoT Management System – RMIT University   2025
Tech Stack: Python, Flask (REST/HTTP), Flask-SocketIO (WebSocket), MQTT, SQLAlchemy, Google Cloud SQL, Raspberry Pi
- Built a distributed backend system to manage classroom bookings, room access, and IoT device coordination.
- Designed and implemented REST APIs for bookings, schedules, and RFID validation.
- Integrated real-time communication dashboard using WebSockets for room status and sensor data.
- Stored users, schedules, and sensor data in a cloud-hosted database.

WIL Industry Project – Microsoft x Australian Red Cross   2025
Tech Stack: Power Apps, Power Automate, Dataverse, Power BI
- Collaborated with Microsoft and Australian Red Cross to design a mobile-first application that empowers Indigenous and local communities to report real-time environmental data on climate change.
- Developed workflows, data structures, dashboards using Microsoft's Power Platform.
- Delivered a working solution that translated cultural insights into actionable, tech-driven outcomes.

Tutor Hiring Platform – RMIT University   2025
Tech Stack: React, TypeScript, Node.js, TypeGraphQL, TypeORM, Cloud MySQL, JWT
- Designed and developed a fully functional full-stack web application for managing the selection and hiring of tutors across university courses.
- Implemented a secure GraphQL API using Node.js, TypeGraphQL and TypeORM, with relational data models.
- Built token-based authentication using JWT for role-based access control.
- Focused on backend scalability, secure authentication flows, and client-side state management for a responsive, user-centered experience.

Gotcha Trash – UniHack 2025   2025
Tech Stack: Unity, Python, TensorFlow, OpenCV, ArKit, YOLOv8
- Originated the development of "Gotcha Trash", an AR and AI-powered application designed to promote environmental cleanliness through a gamified system.
- Implemented cutting-edge AI models and fine-tuning for real-time detection of trash and bins.

AI Hospital – MedHack 2025 (Top 8 Finalist)   2025
Tech Stack: Conceptual Prototype
- Collaborated in a multidisciplinary team as the sole tech-background participant, working alongside medical and business professionals to address real-world healthcare inefficiencies.
- Proposed a scalable AI-driven application that helps patients log cardiovascular episodic moments and daily health data, AI chatbot-like questioning, and generating structured reports for doctors.
- Focused on backend system architecture, and workflow optimisation to improve usability and industry adoption.

CultureConnect – SWITCH x CIST Hackathon (Top 5)   2024
Tech Stack: React.js, SQLite3, Auth0
- Led the development of CultureConnect, a platform that simplifies the homestay process for international students, improving accessibility and fostering cultural exchange.
- Strengthened user security and privacy by integrating authentication protocols with Auth0, ensuring a safe experience.
- Delivered a fully functional prototype under time constraints and secured a top 5 placement.

EDUCATION

RMIT University, Melbourne   **Graduated: Dec 2025**
Bachelor of Computer Science Professional