

Tuan Ngo

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Education

VNUHCM - University of Science

October 2022 - October 2026 (expected)

Bachelor of Science, *Advanced Program in Computer Science* (GPA: 9.25 / 10.00)

Ho Chi Minh City, Vietnam

- **Relevant Coursework:** Data Structures and Algorithms, Object Oriented Programming, Computer Systems, Introduction to Database Systems, Software Design and Analysis

Technical Skills

- **Programming Languages:** C++, GoLang, Java, Python, Javascript
- **Technologies and Tools:** NodeJS; MongoDB, Git, Docker, AWS; Linux
- **Spoken Languages:** English, Vietnamese

Awards

- **Rank 133 out of 415**, The 2023 ICPC Vietnam National Programming Contest
ICPC is a global competitive programming competition. Competed in teams of 3 to solve 10-13 programming challenges in 5 hours
- **Consolation Prize**, The Vietnam **National Olympiad** in Informatics 2022
- **Rank 25 out of 358**, The 2021 ICPC Vietnam National Programming Contest - High School Division
- Vallet Fellowship 2022 by Rencontres du Vietnam for Excellent Students

Projects

E2EE Signal Protocol Chat Engine | GoLang, WebSocket, Signal Protocol, tvview

Jul 2025 - Aug 2025

- Built an end-to-end encrypted chat application implementing **Signal Protocol specification** for secure messaging with a team of 3.
- Implemented **Double Ratchet Algorithm** with client-side encryption/decryption and key rotation mechanisms to ensure **forward secrecy**.
- Developed real-time messaging system using **WebSocket** supporting direct messages, group chat rooms, and user status tracking.
- Created cross-platform **terminal UI** with login system, room management, and online/offline presence indicators using tvview library.

Orantio | NodeJS, Apollo GraphQL, MongoDB, Docker

Jun 2024 - Dec 2024

- Developed backend for a Discord-like social platform with a 4-member team, implementing user authentication, server/channel management with role-based permissions, messaging with search functionality, and friend system.
- Built messaging system supporting **40-50 concurrent users** with **average response time under 100ms** using **GraphQL API** with Apollo and React for frontend integration.
- Implemented premium subscription system with **VNPay payment gateway**, including database schema design, transaction logging, and API endpoints for payment processing and subscription management.
- Configured **AWS S3** with CDN caching for efficient storage and retrieval of user-uploaded media; containerized application using **Docker** for deployment.

Crossy Road | C++, Raylib

Dec 2023 - Jan 2024

- Recreated Crossy Road game in **C++** using Raylib for graphics and game loop management with a team of 4, implementing core mechanics including player movement, collision detection, and obstacle generation.
- Added gameplay features such as scoring system, difficulty scaling, and character customization with different skins; designed menu interface for navigation and settings.

Word Dictionary | C++, Raylib

Aug 2023 - Sep 2023

- Built Vietnamese-English dictionary application in **C++** with Raylib UI supporting bidirectional translation lookups and emoji-based searches with a 4-member team.
- Implemented **Trie** data structure for efficient word searches and **HashMap** for $O(1)$ lookup performance; added feature for users to import and manage custom word lists.