

Quoc An Tran

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Introduction

I'm an energetic and open-minded person who enjoys connecting with others, whether it's teaming up on the football field or having coffee chats that lead to meaningful conversations. I believe we learn best when we learn together, and I enjoy bringing people together to build trust, share ideas, and move toward a common goal.

Summary

As a senior computer science student, I have gained solid knowledge in web development through hands-on experience in academic and personal projects. I am also passionate about creating mini tools to support other developers and improve productivity. My goal is to become a skilled and reliable software engineer who contributes positively to the tech community.

Technical Skills

Programming Languages: C#, JavaScript

Technical Skills:

- Frameworks: ASP.NET Core, ASP.NET Core Web API
- ORM: Entity Framework Core
- API & Authentication: RESTful APIs, JWT Authentication, Google OAuth 2.0, Swagger/OpenAPI
- Databases: Microsoft SQL Server, MySQL, MongoDB
- Caching: Redis
- Infrastructure & DevOps: Nginx, Docker
- Cloud & Storage Services: AWS S3, Cloudinary
- Other tools: Git, GitHub, Serilog, Hangfire, environment configuration (.env)

Other Skills:

- Teamwork
- Self Study
- Read and study document in English
- Good understanding in OOP
- Good programming and debugging skills

Certificates

- Google – Badges of Google Cloud and Workspace ↗
- Microsoft – Digital Skills ↗

Professional Projects

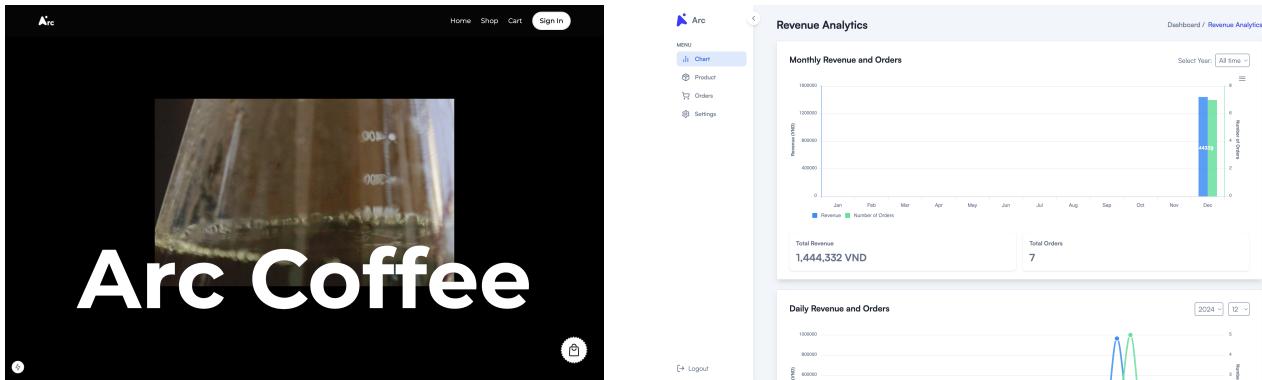
Sky Math Education Platform (3 members)

The image shows two screenshots of the Sky Math Education Platform. The left screenshot is the homepage, featuring a math-themed background with handwritten equations like $E = mc^2$ and $a^2 + b^2 = c^2$. It includes sections for 'Our Dedication, Your Math Excellence' and buttons for 'Become our tutor', 'Become our student', and 'Find Your Math Tutor'. The right screenshot is a 'Resources' page with a sidebar for 'Study Materials' (Articles, Enrollment, Tutor Directory, Question Management) and a grid of resource cards. Examples include 'Enumeration and data...', 'Schröder-Sims algorithm...', 'Abstract Algebra: An...', and 'Mathematical Statistics...'. Each card has a thumbnail, title, and a brief description.

- **Website:** skyeeducation.com
- **Description:** Developed a comprehensive online platform that connects students with high-quality math tutors across the United States. The system provides a personalized learning experience and includes role-based interfaces for students, tutors, administrators, and platform staff. Core features include user management, tutor discovery, session scheduling, communication tools, and administrative controls for overseeing operations.
- **Technologies:**
 - Backend: ASP.NET Core Web API, Entity Framework Core, JWT Authentication, Google OAuth 2.0, Redis, Swagger/OpenAPI
 - Database: Microsoft SQL Server
 - Infrastructure: Docker, Nginx (Reverse Proxy), AWS S3 (file/image storage), Amazon Lightsail (server hosting)
 - Email Service: SMTP (transactional notifications)
 - Frontend Stack: Next.js, Tailwind CSS, Axios, Redux
- **Responsibilities:**
 - Took full ownership of backend development as the project's sole backend engineer and technical lead
 - Designed and implemented the entire database schema in SQL Server, including tables, relationships, and constraints
 - Implemented data access with Entity Framework Core using code-first, migrations, and repository pattern
 - Developed RESTful APIs with JWT authentication and integrated Google OAuth 2.0 for user login
 - Integrated SMTP for user notifications, password resets, and verification emails
 - Applied Redis caching to boost performance of high-traffic endpoints
 - Created and maintained API documentation with Swagger, supporting smooth frontend-backend collaboration
 - Containerized the backend with Docker, deployed with Docker Compose on Amazon Lightsail, and configured Nginx for routing
 - Configured AWS S3 for secure storage of images and files (PDF, DOCX)
 - Closely collaborated with the Next.js frontend team to align API contracts and ensure seamless integration
 - Led all technical decisions, including architecture, database, deployment, and delivery timeline

Academic Projects

Arc Coffee Shop (2 members)



- **GitHub:** github.com/tquocan04/arccoffee-backend
- **Description:** ArcCoffee is an e-commerce website designed to help users easily discover, select, and purchase bottled water online. The platform provides a seamless shopping experience, allowing customers to browse product catalogs, manage shopping carts, place orders, and track their order history. Administrators can manage products, inventory, and handle customer orders through a dedicated dashboard.

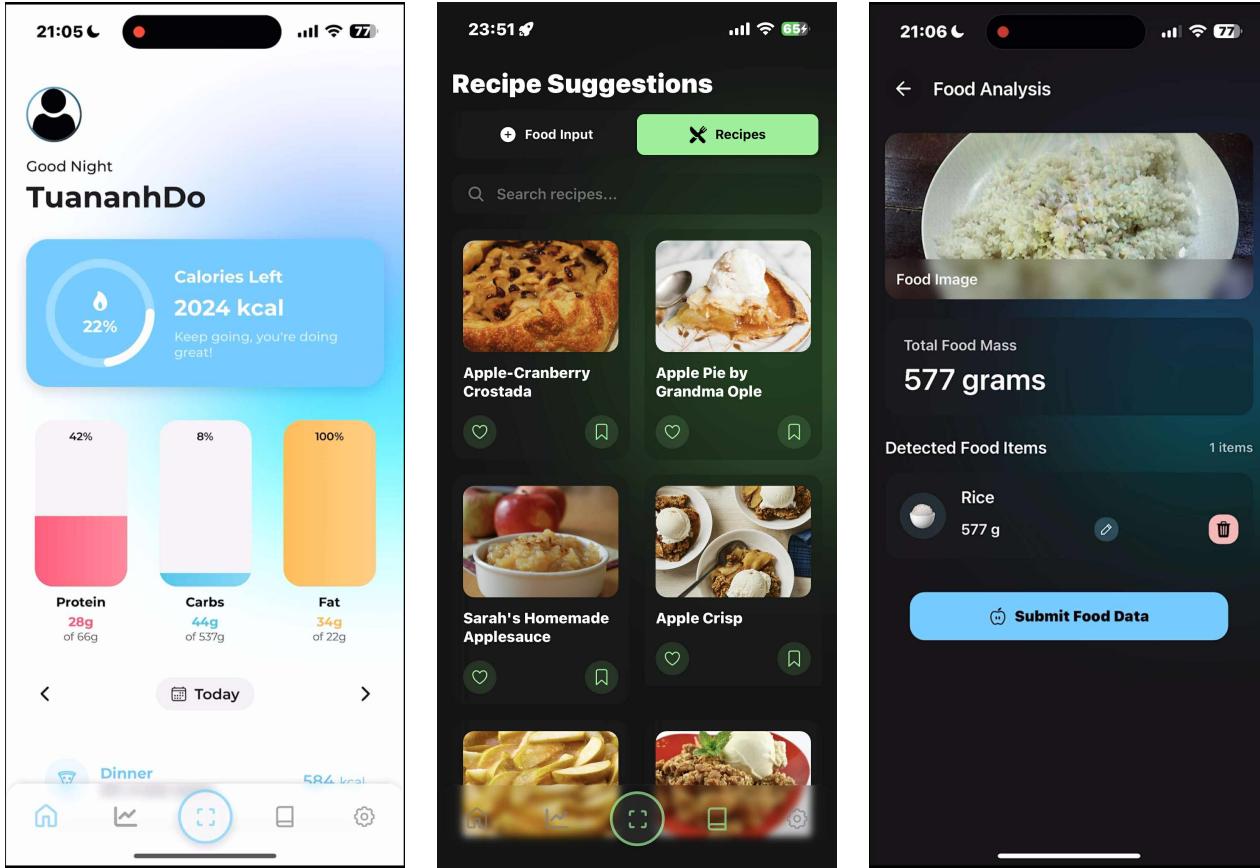
- **Technologies:**

- Backend: ASP.NET Core Web API, Entity Framework Core, JWT Authentication, Swagger/OpenAPI
- Database: Microsoft SQL Server
- Infrastructure: Docker, Nginx (Reverse Proxy)
- Cloud Services: Cloudinary (image storage)
- Frontend Stack: Next.js, Tailwind CSS, Axios, Redux

- **Responsibilities:**

- Served as the primary backend developer, building the entire backend system of the e-commerce platform
- Designed and implemented the full database schema using Microsoft SQL Server
- Developed RESTful APIs for user authentication, product listing, cart, order placement, and order history
- Applied JWT authentication for secure, role-based access control
- Managed data access using Entity Framework Core with code-first and migrations
- Integrated Cloudinary for image upload and optimization
- Created comprehensive API documentation with Swagger for easier testing and collaboration
- Containerized the backend using Docker and deployed via Docker Compose with Nginx reverse proxy
- Collaborated with the frontend team to define and test API contracts via Axios and Redux
- Applied clean architecture and performance tuning to ensure system scalability and maintainability

Nutrition App (5 members)



- **GitHub:** github.com/tquocan04/nutritionapp-backend
- **Video Demo:** [youtube.com/watch?v=H5-OwkxSjV8](https://www.youtube.com/watch?v=H5-OwkxSjV8)
- **Description:** Nutrition App is a mobile application that helps users monitor their nutrition and fitness progress through smart, AI-powered features. Users can track weight trends, log meals, and analyze daily intake of calories and macronutrients. The app supports two logging methods: manual entry or food image capture. An integrated AI model analyzes food images to identify dishes and estimate nutritional content (e.g., calories, protein, carbs, fat). It also suggests meals based on users' past eating behaviors and goals.

• Achievements:

- Encouragement Prize, University Level, Ho Chi Minh City University of Education, 2025
- Second Prize, Faculty Level, Ho Chi Minh City University of Education, 2025
- Published in Asian Journal of Research in Computer Science ([10.9734/ajrcos/2025/v18i5650](https://doi.org/10.9734/ajrcos/2025/v18i5650))

• Technologies:

- Backend: ASP.NET Core Web API, Entity Framework Core, JWT Authentication, Hangfire, Swagger/OpenAPI
- Database: Microsoft SQL Server
- AI & Vector Search: Google Gemini API – text-embedding-004 model for semantic text embedding, Elasticsearch – used as a vector database for meal similarity and personalized recommendations
- Infrastructure: Docker, Nginx (Reverse Proxy)
- Frontend Stack: React Native

• Responsibilities:

- Took full ownership of backend design and development
- Designed and implemented a normalized SQL Server database schema
- Built RESTful APIs for user registration, authentication, meal logging (image/manual), and progress tracking

- Secured endpoints using JWT authentication and role-based access control
- Used Hangfire to schedule daily jobs to generate nutrition summaries for users
- Applied Google's text-embedding-004 model (via Gemini API) to embed meal ingredients into semantic vectors
- Stored vectors in Elasticsearch and implemented similarity search for personalized meal suggestions
- Documented the entire API with Swagger to streamline team communication and testing
- Containerized the backend with Docker, deployed via Docker Compose
- Coordinated with the React Native team to align API contracts

Coffee Management System (3 members)

- **GitHub:** github.com/TuananhDo0308/CoffeeShop-Management-WPF
- **Video Demo:** youtube.com/watch?v=bbWwTnPF55c
- **Description:** An e-commerce management system for coffee shop operations, featuring a WPF-based UI tailored for admin, employee, and barista roles.
- **Technologies:**
 - C# (MVVM Pattern), ASP.NET
 - Database: Microsoft SQL Server
- **Responsibilities:**
 - Conducted requirement surveys and analysis to understand operational needs of retail stores
 - Designed and implemented revenue calculation algorithms based on business logic
 - Independently designed and implemented a structured relational database schema using Microsoft SQL Server, including tables, relationships, and constraints

Awards

2nd Runner-up, Bosch Coderace 2024: Beyond the Horizon	2024
Scientific Research Awards	2025
Third Prize, Ministerial Level (National Competition)	
Encouragement Prize, University Level (HCMUE)	
Second Prize, Faculty Level (HCMUE)	
Published in Asian Journal of Research in Computer Science (10.9734/ajrcos/2025/v18i5650)	

Education

Fourth-year Student, Ho Chi Minh City University of Education	Sep 2022 – Present
Bachelor of Engineering in Software Engineering	
Expected graduation: July 2026	
GPA: 3.35 / 4.00	