Huu An Duc (Jack) Le

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Education

University of Toronto 2028

Computer Science - Bachelor of Science - 3.76 GPA *Toronto, Canada*

Courses: Software Design (Object-Oriented Programming), Systems Programming (Unix/Linux), Computer Organization (Assembly), Data Structures & Analysis, Database Management Systems, Web Programming

Leaderships: Director of Operations (GenAI Genesis), Vice-President of Tech (UTMSAM), Organizer (EmberHacks), Tech Associate (UTMFA), Hackathon Mentor (Ignition Hacks)

Experiences

Research Assistant Sep 2025 – Present

University of Toronto *Toronto, Canada*

- Collaborated with PhD students and professors to **develop an AI coding assistant for 1,000+ students**, creating clear explanations, alternative solutions, and design rationales to enhance technical understanding
- **Analyzed 1,600+ user data points** using Pandas/Matplotlib to find trends and optimize tool efficiency
- Worked on microservice using TypeScript and OpenAI API, adding contextual insights to AI responses

Software Project Lead Aug 2025 – Present

UofT Blueprint + Toronto Rape Crisis Center *Toronto, Canada*

- **Led 8 software developers**, organized development tickets to create a management system for TRCC
- Deployed Next.js (TypeScript) app with Docker and CI/CD pipelines, **cut deployment failures by 50%**
- Enforced **80% test coverage** (Vitest), added Husky commit hooks, and automated dependency updates
- **Improved delivery time by 30%** for stakeholders using Git, Github workflows and SCRUM framework

Tech Support Assistant Aug 2025 – Present

UTM Career Center *Toronto, Canada*

- Created AODA-compliant documents and designed **inclusive UI/UX interfaces for 16,000+ students**
- Implemented JavaScript-based scripts for data-entry workflows, **saving $1,000/month** in operational cost
- Leveraged AI tools to optimize code and development time, delivering projects **1 month ahead of schedule**

Standard Operation Procedure Intern May 2025 – Aug 2025

TRG International *Ho Chi Minh, Vietnam*

- Built chatbots with automated workflows, **reducing communication time by 40%** for 150+ employees
- Created Python tools to compare documents and track live changes, **saving 20+ minutes/review cycle**
- **Geocoded 100+ addresses** with Python and mapped staff locations to analyze commute paths for HR team

Projects

Vibe-Learn **Java / Spring Boot / Apache Kafka / MongoDB / Docker / Grafana**

- Built event-driven VS Code extension capturing real-time code changes, processing 1,000+ events/session with sub-100ms latency across 4 Spring Boot microservices using Kafka message streaming and MongoDB database
- Optimized MongoDB connection and Kafka producer pooling, reducing request latency from 120ms to 2ms
- Configured circuit breakers and DLQ for fault tolerance, ensuring reliable processing with automatic recovery
- Made real-time Grafana dashboards to monitor service health, connection pool exhaustion, and partition lag
- Conducted load and stress testing, simulating 20+ concurrent users generating 50-500 events/seconds

UTM-Live **Python / Django / JavaScript / PostgreSQL / Mapbox**

- Created an interactive end-to-end Django app for students to explore study spots with realistic 3D models
- Boosted engagement with real-time dynamic lighting/weather effects based on user's live GPS coordinates
- Secured user information with JWT and PostgreSQL; designed REST APIs for location CRUD operations

SkySync **Python / JavaScript / Express.js / Node.js / React.js / MongoDB**

- This app identifies aircraft groups that can fly in "bird formations" to reduce fuel, saving up to 4%/trip
- Designed a flight-pairing algorithm that creates 600K+ plane formations by proximity and schedule overlap
- Handled 1.6M+ flight data with MongoDB indexing and aggregation, reducing query delay from 15s to 500ms
- Integrated Python gradient descent scripts with the Node.js backend to compute fuel-optimal routes in real time

Technical Skills

Languages: Python, JavaScript/Typescript, Java, C, SQL, HTML/CSS
Frameworks: Spring Boot, Node.js, Next.js, Django, React.js, FastAPI, Flask, Tailwind CSS, Vitest, JUnit, PyTest
Technologies: Git/Github, PostgreSQL, MongoDB, Supabase, AWS, Google Cloud Platform, Apache Kafka, Docker
Coding Tools: VS Code, IntelliJ, Pycharm, Gemini CLI, Cursor, Claude