

Huu An Duc (Jack) Le

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EDUCATION

University of Toronto

Computer Science - Bachelor of Science - 3.76 GPA

2028
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

University of Toronto

Sep 2025 – Present
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

UofT Blueprint + Toronto Rape Crisis Center

Aug 2025 – Present
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

UTM Career Center

Aug 2025 – Present
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

TRG International

May 2025 – Aug 2025
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**

Image Gallery Python / FastAPI / JavaScript / AWS

- Built a serverless image gallery using AWS EC2, S3 buckets, and DynamoDB for metadata and image storage
- Implemented global caching with CloudFront, reducing average load times from **220ms to 35ms**
- Compressed images by 60%** using Canvas API and automated file cleanup with AWS Lambda

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