

Huu An Duc (Jack) Le

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EDUCATION

University of Toronto

2028

Computer Science - Bachelor of Science - 3.9 GPA

Toronto, Canada

Courses: Software Design (Object-Oriented Programming, Java), Systems Programming (Unix/Linux, C),
Computer Organization (Assembly), Data Structures & Analysis, Theory of Computation

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** that generates and explains code through clear steps, alternative solutions, and rationales behind each design choice
- Worked on microservice backend using TypeScript and OpenAI API to deliver contextual insights for AI responses
- Performed **data analysis on 1600+ survey data points** using Pandas/Matplotlib to uncover key trends

Software Project Lead

Aug 2025 – Present

UofT Blueprint

Toronto, Canada

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

Tech Support Assistant

Aug 2025 – Present

UTM Career Center

Toronto, Canada

- Ensured accessibility (AODA compliant) interfaces and **inclusive UI/UX designs for 16,000+ students**
- Leveraged AI tools to optimize code and development time, delivering projects **1 month ahead of schedule**
- Implemented JavaScript-based tools for data-entry workflows, **saving \$1,000/month** in manual labor

Standard Operation Procedure Intern

May 2025 – Aug 2025

TRG International

Ho Chi Minh, Vietnam

- Built notification bots with automated workflows, **cutting communication time by 40%** for 150+ employees
- Created a Flask app that parsed Word document to highlight key changes, **saving 20+ minutes per review**
- Automated geocoding of 100+ addresses using Python, generating interactive maps for HR location analytics

Computer Science Mentor

Sep 2024 – May 2025

University of Toronto

Toronto, Canada

- **Contributed 600+ helpful responses** to courses' forum, received 95% positive feedback from students
- Wrote JUnit, PyTest tests for students to debug, increasing test coverages and improving code reliability

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 testing with JMeter simulating 100 concurrent users generating 1,000 events/minute

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

OperAid 🌀 Python / FastAPI / JavaScript / React / PostgreSQL / Tailwind CSS

- Worked in a team of 4 on a voice-controlled app to retrieve patient data and MRI scans in under 5 seconds

- Planned, prototyped, and deployed a fullstack voice assistant in 6 hours using React.js, FastAPI, ElevenLabs
- Connected speech-to-text pipeline with PostgreSQL database to allow voice-driven access to 500+ records

Image Gallery 🌀 Python / FastAPI / JavaScript / AWS

- Built a serverless image gallery using AWS EC2, S3, 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

LeReplacer (hackathon winner) 🌀 JavaScript / Node.js / Express.js / Handtrack.js

- Built Chrome extension with ML models to detect and replace facial features in real-time with 95% accuracy
- Implemented OAuth flow integrating Twitter API for automated posting, sharing 20+ customisable daily tweets
- Created a context-aware scraping engine that extracts on-screen pages' metadata to provide data for AI processing

Catch-It 🌀 TypeScript / React Native / Google Cloud Platform

- Engineered a trip planning app for iOS/Android/Web using React Native, with 95%+ code reuse across platforms
- Utilized TanStack Query async state management, optimizing API through caching to reduce redundant requests
- Integrated 3 GCP API services to provide a seamless end-to-end travel experience, saving 2 minutes per search

Paint App 🌀 Java / JavaFX

- Worked in a team of 4 to build an interactive JavaFX paint application with 20+ different tools and features
- Architected MVC structure with Observer, Factory, Command, Visitor, Strategy design patterns across 26 classes
- Designed a responsive drawing engine using JavaFX and GraphicsContext, delivering smooth rendering at 60 FPS

Job Hunter 🌀 Python / FastAPI / BeautifulSoup / PostgreSQL / Matplotlib

- Web scraped and analyzed 100+ job postings from LinkedIn, Indeed, Google using BeautifulSoup and JobSpy
- Generated cover letter using keyword extraction and natural language processing, saving 90% of writing time
- Visualized market trends using Matplotlib and Chart.js, identifying the top 10 in-demand tech skills

Youtube as a Service 🌀 Python / Django / Google Cloud Platform / Tailwind CSS

- Encoded files as video frames uploaded to YouTube, achieving unlimited cloud storage with lossless data recovery
- Produced compression-tolerant algorithm, reaching 99.9% accuracy in bit-level file recovery across 30+ files
- Designed backend safeguards for large file handling, error recovery, and long-running encoding tasks

Light Up The Shadow 🌀 Assembly

- Engineered a tile-based survival game entirely in RISC-V Assembly, managing over 2,000 lines of low-level code
- Engineered a memory-efficient game state engine by utilizing byte-level data packing to track live coordinates
- Developed optimal pathfinding algorithms and respawning mechanisms without overlapping for all entities

Street Roamer S3000 🌀 C++ / Arduino

- Developed an urban robot to identify flickering streetlights and uneven sidewalks, utilizing Arduino and sensors
- Architected a 3-axis detector by processing raw gyroscope data from an MPU6500 sensor to flag sidewalk bumps
- Designed a high-sensitivity distance detection module using ultrasonic pulses to identify infrastructure obstructions

TECHNICAL SKILLS

Languages: Python, JavaScript/Typescript, Java, C, SQL, HTML/CSS

Frameworks: Spring Boot, Next.js, Django, React.js, FastAPI, Flask, Tailwind CSS

Technologies: Git/Github, PostgreSQL, MongoDB, Supabase, AWS, Google Cloud Platform, Apache Kafka, Docker

Coding Tools: VS Code, IntelliJ, Pycharm, Gemini CLI, Cursor, Claude