

# Huu An Duc (Jack) Le

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## EDUCATION

<b>University of Toronto</b> <i>Computer Science - Bachelor of Science - 3.9 GPA</i>	2028 <i>Toronto, Canada</i>
<b>Courses:</b> Software Design (Object-Oriented Programming, Java), Systems Programming (Unix/Linux, C), Computer Organization (Assembly), Data Structures & Analysis, Theory of Computation	
<b>Leaderships:</b> Director of Operations ( <a href="#">GenAI Genesis</a> ), Vice-President of Tech ( <a href="#">UTMSAM</a> ), Organizer ( <a href="#">EmberHacks</a> ), Tech Associate ( <a href="#">UTMFA</a> ), Hackathon Mentor ( <a href="#">Ignition Hacks</a> )	

## EXPERIENCES

<b>Research Assistant</b> <i>University of Toronto</i>	Sep 2025 – Present <i>Toronto, Canada</i>
<ul style="list-style-type: none"><li>Collaborated with PhD students and professors to <b>develop an AI coding assistant for 1,000+ students</b> that generates and explains code through clear steps, alternative solutions, and rationales behind each design choice</li><li>Worked on microservice backend using TypeScript and OpenAI API to deliver contextual insights for AI responses</li><li>Performed <b>data analysis on 1600+ survey data points</b> using Pandas/Matplotlib to uncover key trends</li></ul>	
<b>Software Project Lead</b> <i>UofT Blueprint</i>	Aug 2025 – Present <i>Toronto, Canada</i>
<ul style="list-style-type: none"><li><b>Led 8 software developers</b>, organized development tickets to create a volunteer management system for <a href="#">TRCC</a></li><li>Deployed Next.js app in TypeScript with Docker and CI/CD pipeline, <b>reducing deployment failures by 50%</b></li><li>Enforced <b>80% test coverage</b> (Vitest), added Husky pre-commit hooks, and automated dependency maintenance</li><li><b>Improved delivery time for stakeholders by 30%</b> using Git workflows and SCRUM framework</li></ul>	
<b>Tech Support Assistant</b> <i>UTM Career Center</i>	Aug 2025 – Present <i>Toronto, Canada</i>
<ul style="list-style-type: none"><li>Ensured accessibility (AODA compliant) interfaces and <b>inclusive UI/UX designs for 16,000+ students</b></li><li>Leveraged AI tools to optimize code and development time, delivering projects <b>1 month ahead of schedule</b></li><li>Implemented JavaScript-based tools for data-entry workflows, <b>saving \$1,000/month</b> in manual labor</li></ul>	
<b>Standard Operation Procedure Intern</b> <i>TRG International</i>	May 2025 – Aug 2025 <i>Ho Chi Minh, Vietnam</i>
<ul style="list-style-type: none"><li>Built notification bots with automated workflows, <b>cutting communication time by 40%</b> for 150+ employees</li><li>Created a Flask app that parsed Word document to highlight key changes, <b>saving 20+ minutes per review</b></li><li>Automated geocoding of 100+ addresses using Python, generating interactive maps for HR location analytics</li></ul>	
<b>Computer Science Mentor</b> <i>University of Toronto</i>	Sep 2024 – May 2025 <i>Toronto, Canada</i>
<ul style="list-style-type: none"><li><b>Contributed 600+ helpful responses</b> to courses' forum, received 95% positive feedback from students</li><li>Wrote JUnit, PyTest tests for students to debug, increasing test coverages and improving code reliability</li></ul>	

## PROJECTS

<b>Vibe-Learn</b>  <a href="#">Java</a> / <a href="#">Spring Boot</a> / <a href="#">Apache Kafka</a> / <a href="#">MongoDB</a> / <a href="#">Docker</a> / <a href="#">Grafana</a>	
<ul style="list-style-type: none"><li>Built event-driven VS Code extension capturing real-time code changes, <a href="#">processing 1,000+ events/session</a> with <a href="#">sub-100ms latency</a> across 4 Spring Boot microservices using Kafka message streaming and MongoDB database</li><li>Optimized MongoDB connection and Kafka producer pooling, <a href="#">reducing request latency</a> from 120ms to 2ms</li><li>Configured circuit breakers and DLQ for fault tolerance, ensuring reliable processing with automatic recovery</li><li>Made real-time Grafana dashboards to monitor service health, connection pool exhaustion, and partition lag</li><li>Conducted load testing with JMeter <a href="#">simulating 100 concurrent users generating 1,000 events/minute</a></li></ul>	
<b>UTM-Live</b>  <a href="#">Python</a> / <a href="#">Django</a> / <a href="#">JavaScript</a> / <a href="#">PostgreSQL</a> / <a href="#">Mapbox</a>	
<ul style="list-style-type: none"><li>Created an interactive end-to-end Django app for students to explore study spots with <a href="#">realistic 3D models</a></li><li>Boosted engagement with <a href="#">real-time dynamic lighting/weather effects</a> based on user's live GPS coordinates</li><li>Secured user information with JWT and PostgreSQL; designed REST APIs for location CRUD operations</li></ul>	
<b>OperAid</b>  <a href="#">Python</a> / <a href="#">FastAPI</a> / <a href="#">JavaScript</a> / <a href="#">React</a> / <a href="#">PostgreSQL</a> / <a href="#">Tailwind CSS</a>	
<ul style="list-style-type: none"><li>Worked in a <a href="#">team of 4</a> on a voice-controlled app to <a href="#">retrieve patient data and MRI scans in under 5 seconds</a></li></ul>	

- 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 / Beautiful Soup / PostgreSQL / Matplotlib**

- Web scraped and analyzed 100+ job postings from LinkedIn, Indeed, Google using Beautiful Soup 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

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**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