

# Axel Tang

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## Education

<b>University of Toronto</b>	2025 - Expected 2027
<i>Master of Engineering (Emphasis on Data Analytics and Machine Learning)</i>	Toronto, Canada
• Relevant Coursework: Applied Deep Learning, Intro to Machine Learning, Intro to Healthcare Robotics	
<b>University of Ottawa</b>	2020-2024
<i>Honours Bachelor of Science in Computer Science (GPA: 3.51 / 4.00)</i>	Ottawa, Canada
• Honours and Awards: Dean's Honour List, International Merit Scholarship	
<b>Credentials</b>	2025
<i>Post Grad Certifications</i>	Remote
• <b>Harvard Online:</b> Data Science for Business	
• <b>Deeplearning.AI:</b> Machine Learning Specialist	

## Relevant Work Experience

<b>Hong Kong General Chamber Of Commerce</b>	July 2024 – Aug 2024
<i>Information Technology Intern – Software Development &amp; Computer Vision</i>	Hong Kong
• Implemented a <b>motion detection</b> and <b>face recognition system</b> using <b>Python OpenCV contour detection</b> , enabling security camera monitoring.	
• Used fuzzywuzzy algorithm to compare data from SQL database to extract abbreviated names.	
• Re-designed intranet webpages with ASP.net & CSS and data entry into system.	
<b>InteractHealthPro</b>	Mar 2024 – June 2024
<i>Software Developer Intern</i>	Canada
• Migrated from Keap to Groove.cm by rebuilding automations, transferring customer data, and reconfiguring funnels, reducing manual workload and improving team operational flow.	

## Projects

<b>LocalML-Commuter</b>   PyTorch, scikit-learn, Typer, model evaluation	Jan 2026
• Designed a lightweight CLI that ingests <b>real-world commute signals</b> (weather, transit ETA, ride-hailing pricing) and performs <b>feature extraction</b> for <b>supervised machine learning</b> .	
• Built and trained a <b>PyTorch neural network</b> to model <i>Uber vs TTC decisions</i> , <b>calibrating prediction confidence</b> to achieve <b>80+%</b> reliability on <b>held-out validation data</b> .	
• Designed a <b>data logging and labeling pipeline</b> combining <b>personal commute outcomes</b> with <b>external API data</b> , enabling <b>continuous dataset growth</b> and <b>iterative model retraining</b> .	

<b>Retrieval-Augmented Generation (RAG) Adaptive Chunking</b>   Python, PyTorch, FAISS	Sept 2025
• Built a baseline RAG pipeline including text preprocessing, fixed-size chunking, dense embedding generation, an in-memory vector store, and a retriever.	
• Developed and evaluated adaptive chunking strategies via (TriviaQA, NaturalQuestions).	
* TriviaQA (Qwen-3-8B) – <b>59.2% → 66.9% (Top 3 RAG)</b>	
* NaturalQuestions (Llama-3.1-8B) – <b>32.4% → 43.9% (Top 3 RAG)</b>	

<b>Umple</b>   Java, Internal Language: UML	<a href="https://umple.org">https://umple.org</a>
• Actively contributed to an open source project ( <b>model-oriented programming tool</b> ) with 1.78+ million visitors.	
• Tasked with implementing and resolving <b>Java</b> and <b>Umple</b> issues while ensuring effective version control and <b>CI/CD pipeline</b> .	
• Submitted multiple <b>Pull Requests</b> ; such as extraneous bracket detection with <b>Regex</b> and <b>Batch Scripts</b> for Windows Development	

## Technical Skills

**Frameworks:** PyTorch, TensorFlow, Hugging Face, Scikit-learn

**Tools:** FAISS, Docker, Jupyter, Google Colab, Git

**Concepts:** Deep Learning, Neural Network, NLP, RAG, Information Retrieval, Adaptive Chunking

**Languages:** Languages: Python, Java, C#, JavaScript (React, Node.js), Kotlin, Go