




# Axel Tang

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 [github.com/AxelTWC](https://github.com/AxelTWC)

## Education

<b>University of Toronto</b> <i>Master of Engineering (Emphasis on Data Analytics and Machine Learning)</i> <ul style="list-style-type: none"><li><b>Relevant Coursework:</b> Applied Deep Learning, Intro to Cloud Computing</li></ul>	2025 - Expected 2027 Toronto, Canada
<b>University of Ottawa</b> <i>Honours Bachelor of Science in Computer Science (GPA: 3.51 / 4.00)</i> <ul style="list-style-type: none"><li><b>Honours and Awards:</b> Dean's Honour List, International Merit Scholarship</li></ul>	2020-2024 Ottawa, Canada
<b>Credentials</b> <i>Post Grad Certifications</i> <ul style="list-style-type: none"><li><b>Harvard Online:</b> Data Science for Business</li><li><b>Deeplearning.AI:</b> Machine Learning Specialist</li></ul>	2025 Remote

## Relevant Work Experience

<b>Hong Kong General Chamber Of Commerce</b> <i>Information Technology Intern – Software Development &amp; Computer Vision</i> <ul style="list-style-type: none"><li>Implemented a <b>motion detection</b> and <b>face recognition system</b> using <b>Python OpenCV contour detection</b>, enabling security camera monitoring.</li><li>Used fuzzywuzzy algorithm to compare data from SQL database to extract abbreviated names.</li><li>Re-designed intranet webpages with ASP.net &amp; CSS and data entry into system.</li></ul>	July 2024 – Aug 2024 Hong Kong
<b>InteractHealthPro</b> <i>Software Developer Intern</i> <ul style="list-style-type: none"><li>Migrated from Keap to Groove.cm by rebuilding automations, transferring customer data, and reconfiguring funnels, reducing manual workload and improving team operational flow.</li></ul>	Mar 2024 – June 2024 Canada

## Academic Projects

<b>Retrieval-Augmented Generation (RAG) Adaptive Chunking</b>   <i>Python, PyTorch, FAISS</i> <ul style="list-style-type: none"><li>Built a baseline RAG pipeline including text preprocessing, fixed-size chunking, dense embedding generation, an in-memory vector store, and a retriever + RAG orchestration module.</li><li>Developed and evaluated adaptive chunking strategies to improve retrieval relevance compared to fixed-chunk baselines on open-domain QA datasets (TriviaQA, NaturalQuestions).<ul style="list-style-type: none"><li>* TriviaQA (Llama-3.1-8B) – <b>vanilla 74.2% → 70.0% (Top 3 RAG)</b></li><li>* TriviaQA (Qwen-3-8B) – <b>59.2% → 66.9% (Top 3 RAG)</b></li><li>* NaturalQuestions (Llama-3.1-8B) – <b>32.4% → 43.9% (Top 3 RAG)</b></li></ul></li></ul>	End of 2025 - Ongoing
<b>Feedforward Neural Network Classifier</b>   <i>PyTorch, scikit-learn</i> <ul style="list-style-type: none"><li>Built and trained a <b>3-layer neural network (64-32-1)</b> using PyTorch for binary classification on synthetic datasets.</li><li>Implemented full <b>forward/backward propagation</b> and optimized using the <b>Adam optimizer</b>, achieving <b>82+% accuracy</b>.</li><li>Visualized <b>training/test convergence</b> and analyzed gradient behavior over 300 epochs.</li></ul>	Oct 2025
<b>Umple</b>   <i>Java, Internal Language: UML</i> <ul style="list-style-type: none"><li>Actively contributed to an open source project (<b>model-oriented programming tool</b>) with 1.78+ million visitors.</li><li>Tasked with implementing and resolving <b>Java</b> and <b>Umple</b> issues while ensuring effective version control and <b>CI/CD pipeline</b>.</li><li>Submitted multiple <b>Pull Requests</b>; such as extraneous bracket detection with <b>Regex</b> and <b>Batch Scripts</b> for Windows Development</li></ul>	<a href="https://umple.org">https://umple.org</a>

## 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