

Axel Tang

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Education

University of Toronto	2025 - Expected 2027
<i>Master of Engineering (Emphasis on Data Analytics and Machine Learning)</i>	Toronto, Canada
• Relevant Coursework: Applied Deep Learning, Intro to Cloud Computing	
University of Ottawa	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	
Credentials	2025
<i>Post Grad Certifications</i>	Remote
• Harvard Online: Data Science for Business	
• Deeplearning.AI: Machine Learning Specialist	

Relevant Work Experience

Hong Kong General Chamber Of Commerce	July 2024 – Aug 2024
<i>Information Technology Intern – Software Development & Computer Vision</i>	Hong Kong
• Implemented a motion detection and face recognition system using Python OpenCV contour detection , 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.	
InteractHealthPro	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.	

Academic Projects

Retrieval-Augmented Generation (RAG) Adaptive Chunking <i>Python, PyTorch, FAISS</i>	End of 2025 - Ongoing
• 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.	
• Developed and evaluated adaptive chunking strategies to improve retrieval relevance compared to fixed-chunk baselines on open-domain QA datasets (TriviaQA, NaturalQuestions).	
• TriviaQA (Llama-3.1-8B) – vanilla 74.2% → 70.0% (Top 3 RAG)	
• TriviaQA (Qwen-3-8B) – 59.2% → 66.9% (Top 3 RAG)	
• NaturalQuestions (Llama-3.1-8B) – 32.4% → 43.9% (Top 3 RAG)	

Feedforward Neural Network Classifier <i>PyTorch, scikit-learn</i>	Oct 2025
• Built and trained a 3-layer neural network (64-32-1) using PyTorch for binary classification on synthetic datasets.	
• Implemented full forward/backward propagation and optimized using the Adam optimizer , achieving 82+% accuracy.	
• Visualized training/test convergence and analyzed gradient behavior over 300 epochs.	

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