

Annie Yu

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EDUCATION

Western University

Honors Bachelor of Science in Computer Science (GPA 3.8/4.0)

London, ON, Canada

September 2022 - April 2028

- **Leadership:** Vice President of Projects, Western Founders Network; Co-Captain, Ultimate Intramural Team
- **Awards:** Western Scholarship of Distinction (\$2,500), Dean's Honor List, North America Cup Winner (Team Canada, Golf)

Richard Ivey School of Business

Honors Business Administration (HBA), Combined Degree

London, ON, Canada

September 2025 - April 2027

- **Clubs:** Ivey Tech Club, Ivey Product Society

EXPERIENCE

IBM

Application Developer Intern

Toronto, ON, Canada

May 2026 - August 2026

- Built a multi-agent UI-to-code pipeline on Microsoft Agent Framework with persistent **Cognee/Neo4j** memory across stages, raising component-match accuracy by **40%** and eliminating redundant re-ingestion.
- Designed and presented a graph-database POC to a client, structuring domain knowledge into a queryable knowledge graph that reduced manual lookup time by **60%**.
- Benchmarked LLM and embedding providers (Azure OpenAI, Ollama) and designed a **7-stage** schema to scope agent memory retrieval by pipeline stage.

Application Developer Intern

May 2025 - August 2025

- Developed agentic AI tools combining **Neo4j GraphRAG** and **Claude 3.7 Sonnet** for context-driven error diagnosis, cutting enterprise developers' response times by **70%**.
- Evaluated RAG architectures and agent frameworks on accuracy and latency; built Storybook UIs for agent reasoning.
- Architected a Crawl4AI/Puppeteer scraping pipeline that extracted **10K+** material specifications for a shipbuilding client.

Developer Intern

September 2024 - December 2024

- Engineered validation rules for an anomaly detection engine verifying **\$10B** in insurance claims, using Python and SQL on **Azure Synapse** for a \$70M client project.
- Ran parallel QA on two validation engines, resolving discrepancies across **50M+** rows with optimized SQL.

Toronto Metropolitan University – Department of Mathematics

Machine Learning Research Assistant (Supervisor: Dr. Wei (David) Xu)

Toronto, ON, Canada

February 2023 - July 2024

- Developed RL **market-making** agents (DDPG, DQN) in Stable Baselines3 that learn Bitcoin bid/ask quoting strategies.
- Built a custom trading environment on **25-level limit order book** data and implemented actor-critic networks in PyTorch and TensorFlow, training on **6 months** of Bitcoin market data.

PROJECTS

Crowd Watch | Python, CSRNet, PyTorch, OpenCV, VGG16, DJI Drone

- Created a real-time crowd density system using **CSRNet** on drone and webcam feeds, generating heatmaps for **10K+** person crowds with **92%** counting accuracy.
- Reached **15 FPS** inference with a VGG16 backbone and dilated convolutions, with alerts above **5 people/m²**.

Mookie | Python, Flask, LangChain, Ollama, Llama 3.2 Vision, Raspberry Pi, Spotify API

- Built a wearable music assistant that streams **Raspberry Pi Zero 2** camera snapshots to a Flask backend, where a locally hosted **Llama 3.2 Vision** model infers scene mood.
- Orchestrated a **LangChain** pipeline with the **Spotify Web API** (OAuth) to recommend songs and curate live playlists.

Room Finder | React.js, PostgreSQL, Arduino, REST API

- Deployed a real-time availability tracker for **30+** rooms using Arduino sensors with **95%** detection accuracy, computing occupancy probabilities from **10K+** records.
- Designed a PostgreSQL and REST API backend serving live React visualizations used by **500+** students during exams.

TECHNICAL SKILLS

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

Frameworks: React, Node.js, Flask, PyTorch, TensorFlow, Stable Baselines3, LangChain, Pandas, NumPy, OpenCV

AI & Data: Microsoft Agent Framework, Cognee, Neo4j (GraphRAG), AWS Bedrock, Azure OpenAI, Ollama, Azure Synapse

Tools: PostgreSQL, Docker, Storybook, Power BI, Puppeteer, Crawl4AI, Raspberry Pi, Arduino