

# Emma Xing

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## EDUCATION

**University of Waterloo**

**Expected Graduation: May 2028**

*Bachelor of Computer Science (BCS)*

- Faculty Average: 92/100, Term Distinction.
- Clubs and Societies: Hack the North, Directed Research Program, UW Blueprint, Women in CS.

## WORK EXPERIENCE

**RBC Borealis**

**Sept. 2025 – Dec. 2025**

*Machine Learning Software Engineer | Python; OCP; ElasticSearch; Apache Airflow/Dagster; Triton.*

*Toronto, ON*

- Optimizing ML pipelines on credit adjudication and fraud teams.

**Robot Vision and Learning Lab (RVL), UofT**

**May. 2025 – Aug. 2025**

*Undergraduate Research Assistant | Python; MuJoCo; Anaconda; RoboSuite; GELLO robotic arm.*

*Toronto, ON*

- Integrated Gello robotic arm into simulation-to-real (sim2real) pipeline, calibrating sensors and actuators to replicate MuJoCo environment dynamics for granular manipulation benchmark paper under Dr. Florian Shkurti.
- Built simulated lab environments in Mujoco, collected 300+ trajectories of robotic training data, and trained/tuned diffusion policy models, iterating on results to increase accuracy by 15%.

**Royal Bank of Canada (RBC)**

**May. 2025 – Aug. 2025**

*Software Engineer and Data Scientist | Python; FastAPI; BERTopic; PostGresSQL; GCP; OCP; Docker.*

*Toronto, ON*

- Built full-stack internal tool with BERTopic + OpenAI/Claude APIs for 10+ teammates to cut LivePerson chatbot optimization process from 2 weeks to 10 minutes, boosting containment rates and reducing fallback.
- Architected and optimized PostGresSQL database for data retrieval; deployed application via Docker/Kubernetes on OpenShift with cron-based automation.

**The Mantis Group**

**Nov. 2024 – May. 2025**

*Jr. Data Scientist and ML Specialist | Python; Databricks; Google BigQuery; XGBoost.*

*Toronto, ON*

- Built, trained, and tested ML-powered Marketing Mix Models to predict client KPIs; wrote clear documentation.
- Migrated pipelines to medallion architecture with Delta Live Tables for real-time ingestion.

## PROJECTS

**Haskell Parser | [github.com/emma-x1/haskell-note](https://github.com/emma-x1/haskell-note) | Haskell; Scotty; Aeson;**

- Created MVP of auto-deletion note app using Haskell for parsing and Scotty web framework for UI.

**Autograd Engine | [github.com/emma-x1/neural-network](https://github.com/emma-x1/neural-network) | Python; Numpy; Graphviz**

- Built autograd engine to perform calculus-based computations on scalar-valued function inputs to derive function minima and extended to automated process of backpropagation to train neural network.

**EasyASL | [devpost.com/software/easyasl](https://devpost.com/software/easyasl) | TypeScript; Next.js; Python**

**Winner @ Hack the Valley**

- Created AI-powered American Sign Language (ASL) platform to translate between ASL and English, certify ASL fluency, and assist in learning ASL through responsive dictionary.

**OptimEyes | [devpost.com/software/optimeyes](https://devpost.com/software/optimeyes) | JavaScript; Node.js**

**Winner @ Technova**

- Created gamified web app and extension to encourage eye health by implementing 20-20-20 rule, notifying users to take a break from their screens and participate in a wellness activity.

## CERTIFICATIONS, AFFILIATIONS, & SKILLS

- **Certifications:** FastAPI Complete Course (2025), Girls Who Code Machine Learning and AI Certification (2024), AWS Foundational Certification (in progress).
- **Affiliations:** Hack404 (director), CS-Can, Hack Club, Girls Who Code, Rewriting the Code.
- **Languages:** Python, C, JavaScript, TypeScript, HTML/CSS, Haskell.
- **Tools/Frameworks:** Docker, Kubernetes, Firebase, OCP, AWS, Pandas, React, Svelte, PyTorch, Next/Node.