

# Ariel (Ying Chen) Liu

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## Education

### University of Toronto

Sep 2022 – Present

#### Honours Bachelor of Science (Computer Science)

Toronto, ON

**Relevant courses:** data structures & algorithms, object-oriented programming, operating systems, machine learning, artificial intelligence, web development/web programming, data science, SQL, statistics, AI ethics

## Skills

**Languages:** Python, Java, C, C#, C++, SQL, Postgres, HTML, CSS, JavaScript, TypeScript, Ruby, Bash, Go, Rust, R  
**Frameworks:** React/React Native, Express.js, Node.js, Flask, Vue.js, FastAPI, TensorFlow, PyTorch, Keras, .NET  
**Tools:** AWS, Azure, Git, Github, Docker, Kubernetes, Databricks, MongoDB, JUnit, Figma, Excel, Linux

## Experience

### Amazon

May 2025 – Aug 2025

#### Software Engineer Intern

Vancouver, BC

- Designed and architected an asynchronous **orchestration layer** within Amazon Payments to **automate subscription billing authorizations**—decoupled core APIs, reduced latency in the checkout flow, and improved scalability.
- Led end-to-end delivery of an event-driven cloud computing system leveraging **Amazon Web Services**, including **architecture design**, implementation, technical documentation, and handoff presentations.

### Shopify

Jan 2025 – Apr 2025

#### Engineering Intern (Core ML team)

Toronto, ON

- Implemented **image similarity search** by adding perceptual hashes to images uploaded to Shopify and conducting Comet.ml experiments to optimize hash parameters for improved search accuracy
- Deployed **AI image generation** by training a **LoRA model** to produce Shopify brand aligned images, storing generated images in **Google Cloud**, and retrieving images via **GraphQL API** calls

### BDO LLP

May 2024 – Aug 2024

#### Software Engineering Intern

Toronto, ON

- Designed and implemented a backend automatic document indexing retry queue using **Azure Functions** and **Queue Storage**, leading to a **95% recovery rate** on failed document uploads
- Engineered and optimized ETL data pipelines using **Azure Data Factory**, **Python**, **Spark**, **Databricks**, and **MySQL**, and **reduced processing time by 6x** (from 3 hours to 30 minutes)

### PulseDaily

Jan 2024 – May 2024

#### Software Engineering Intern

Remote

- Contributed to core product development at a seed-stage startup, building a **full-stack Electron** desktop app for data collection and a **React** frontend dashboard for survey insights using agile workflows
- Designed a **PostgreSQL** database and built **REST API** endpoints using **AWS** to handle survey data storage

## Community & Leadership

### Hack the Woods Hackathon

June 2022

#### Founder & Organizer

- Founded a hackathon with over **\$30,000** in sponsorships and **150+ attendees**

### Aerial Evolution Association of Canada

Sep 2024 – May 2025

#### Website & Computer Vision Lead

- Spearheaded an open-source **computer vision** autonomous system that won the **Innovation Award**; placed **3rd** in the design report and **4th** in the flight phase at the 2025 UAS Competition
- Delivered a **98%-accurate YOLOv11** computer vision system by building robust data augmentation and training workflows and developed a real-time drone visualization web platform in **Svelte**.

## Projects

### Food for Thought

([React](#), [JavaScript](#), [Python](#), [Flask](#), [REST APIs](#), [OpenCV](#), [Tensorflow](#))

- Trained a computer vision model achieving over **95% accuracy** on 100+ food classes and integrated model with a **Flask** (Python) backend and **React** frontend