Tristan Lam

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Technical Skills

- **Languages:** Python, C++, Java, C, Javascript, Typescript, SQL, HTML/CSS, Bash
- **Technologies:** AWS, GCP, Docker, Kafka, Apache Beam, PostgreSQL, MySQL, GraphQL, MongoDB, InfluxDB, Maven, Jackson, React, Redux, Node, Express, Postman, Grafana, Selenium

Education

University of Waterloo | Computer Science, AI Specialization (3.9/4.0 GPA)   **Apr 2025**

- **Courses:** Software Engineering (C++), Algorithms, Operating Systems, Databases (SQL)

Relevant Experience

Plenty of Fish | Machine Learning Engineer Intern   **Vancouver, BC**
Machine Learning Recommendations Team   May 2023 - Aug 2023

- Increased profile votes by 11% through developing demographic-specific models and hyperparameter tuning for image ranking and quality enhancement models across PoF and Tinder
- Developed Java Beam pipeline to run various ML models on consumption of Kafka events and store the resulting embeddings in feature store and update user profile with results (e.g. image order)
- Cut all model backfill time by 25% by accelerating image retrievals by 6x after identifying and fixing excessive cache clearing by converting pipelines to consume images from AWS S3 instead of Akamai
- Enabled analytics team to perform experiments by creating a highly efficient data ingestion pipeline, processing 25,000 Kafka events/second and storing relevant info to BigQuery

Arcturus Networks | Software Engineer Intern   **Toronto, ON**
Embedded Computer Vision Team   Sept 2022 - Dec 2022

- Increased processing speed by 4x by implementing batching and multi-threading for read/write operations of vision detection data, resulting in smoother video feeds and analytics dashboards
- Built RESTful backend for object detection and tracking application on an embedded system via asynchronous network of zmq sockets, InfluxDB, and PostgreSQL
- Cut replay viewer loading times in half by loading videos in short segments instead of the entire video and improving SQL query performance by 10x via batching and caching.

WSIB Innovation Lab | Software Engineer Intern   **Waterloo, ON**
Machine Learning R&D Team   Jan 2022 - Apr 2022

- Developed an NLP model with spaCy to identify medical terms in insurance claim documents with 95%+ accuracy
- Computed medical term relevancy to document subject using cosine similarity on snomed2vec embeddings
- Accelerated insurance processing time by 30% through the development of a web app for secure storage of health documents and application of the NLP model via AWS Lambda for auto-redaction

Hop In | Software Engineer Intern   **Toronto, ON**
Core Engineering Team   May 2021 - Aug 2021

- Developed interactive map and backend to display real time route info and generate routes for shuttles based on live traffic conditions and required pick-up locations
- Implemented QR code scanner/generator for driver/rider mobile app for identity and payment verification, interfacing with backend for authentication via GraphQL

Projects

Trading Card Detection *Python, OpenCV, YoloV5, PyTorch*

- Developed a multi-threaded trading card detection and price matching application via video feed with transfer learning YoloV5 model capable of identifying over 15,000 cards at a 93% accuracy

Wave Chat *Javascript, Node, Express, MongoDB, Heroku, Boostrap*

- Live video chat website for university students including university credential verification, homebrewed user matching algorithm, and password salt and hashing
- Winner at DefHacks, conducted beta test and launched shortly after, peaking at 1500 users