

Anton Liu

MACHINE INTELLIGENCE ENGINEERING SCIENCE | University of Toronto, B.A.Sc. 2018-2023

Seeking full time and new grad opportunities starting May 2023

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SKILLS

- **Machine Learning:** Python (TensorFlow, PyTorch, NumPy, OpenCV, pandas, sklearn, Matplotlib, seaborn, spaCy)
- **Data:** Google Cloud Platform (GA4, GTM, BigQuery), MATLAB, PostgreSQL, MySQL, MongoDB, Firebase
- **Web Development/Frameworks:** TypeScript, Node.js, Express.js, Next.js, React, Flask, HTML, CSS, REST, GraphQL
- **Other Tools/Languages:** Java, C, C++, Unix, Git, Heroku, Azure, AWS, pytest, TeamCity
- **Project Management:** Agile methodology, TDD, Scrum, JIRA, Confluence, Trello, Notion, Figma, Miro, ClickUp

WORK EXPERIENCE

Machine Learning Software Developer @ Honeybee Hub

May 2021 – Apr 2022

- Built **recommendation engine** to suggest research studies to participants using **Python (PyTorch, spaCy, NumPy)** and MongoDB, with **matrix factorization** algorithm to predict individual interest in non-participated studies
- Engineered complete data analytics flow, from using **GCP (GA4, GTM, BigQuery)** to track user journeys and conversion rates, to building **APIs** for populating both researcher and internal dashboards (Next.js, Retool) with study related KPIs
- Converted honeybeehub.io platform (**TypeScript, Node, Express**) from REST to **GraphQL** by modifying API Endpoints, calls, and data structures to avoid over-fetching data and improve endpoint organization
- Automated 3-stage workflow to generate **similarity matrix** between studies, trigger recommendation engine, and send emails to **3000+** participants weekly with “Studies Picked for You” based on demographics and participation, doubling study click rate

Machine Learning Data Developer @ Orkestra SCS

May 2020 – Aug 2020

- Developed **TensorFlow** model to predict shipment delays with **91% accuracy** using worldwide ocean vessel trajectory and ocean conditions data, and demoed MVP to IT and business teams to improve supply chain management
- Created automated data cleaning and processing scripts (**Python, PostgreSQL, Microsoft Azure**) to ingest, transform, aggregate, and store data received from external business partners, revamping a manual system to a scalable and robust solution
- Wrote web scraping scripts (**Selenium**) to acquire cargo ship docking schedule data from 10+ logistics corporations

Data Engineer @ Schweitzer Engineering Laboratories

May 2019 – Aug 2019

- Refactored Python codebase to improve pipeline runtime by **12%** and implemented **unit tests** using **pytest** with 98% coverage
- Identified faults in feedback data from protection relays within **2 milliseconds** by programming and training RTACs

Data Analyst @ Union Lithplus Energy Corp.

Jun 2018 – Aug 2018

- Developed analytical models using statistics (predictive value, time series analysis, A/B testing) for machinery maintenance
- Wrote automated **SQL** queries to streamline inventory and created visualizations of inventory management with **seaborn**

PROJECTS

SAE AutoDrive Challenge | aUToronto (UofT Self-Driving Car Team)

autodrive.utoronto.ca

Implemented, trained, and tuned **YOLOv5** algorithm with **nanodet** object detection model using **PyTorch Lightning**

Pedestrian Assist iOS App | TOHacks

devpost.com/software/crossy-road-64byjt

Trained **Azure CustomVision image classifier** with 87% confidence to identify pedestrian signals with live camera feed

Automated EV Chargebot

github.com/ntnox/autonomous-EV-charger

Used OpenCV to detect charging port from Raspberry Pi camera and automatically pilot robot to plug into port location

EXTRACURRICULARS AND HOBBIES

Braking System Lead, UofT Hyperloop Team | **Engine Subsystem Member**, UofT Formula Racing Team | **Chief Engineer**, VEX Robotics Team 10801 | **President**, Principia STEM Society | **Captain**, Trudeau Dragonboat Team | **3D Printing** | Longboarding