Laurence Liang

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Education

McGill University Sept. 2021 – May 2026

Bachelor of Engineering in Mechanical Engineering, Minors in Math and Computer Science *Montreal, Canada*

- $10,000 Quebec Perspective Scholarship, $10,000 Cansbridge Fellowship, $1,500 Desjardins Scholarship, BLUE Residency Scholar, BLUE Community Scholar, RippleX Fellowship, prev. McGill Rocket Team (Propulsion)
- Relevant graduate-level coursework: COMP 551 (Applied Machine Learning), MECH 579 (Multidisciplinary Design Optimization), MECH 530 (Mechanics of Composite Materials), MECH 501(Statistics & ML for Mechanical Eng.)

Experience

Member of Technical Staff, Rootly AI Lab (YC S21) Feb. 2025 – present

Rootly (YC S21) *Toronto, Canada (remote)*

- Developing benchmarks & language model tooling to identify and patch server-side incidents
- Developed a model that achieved 99% accuracy for severity labelling on server log data

Student Researcher, Drone Swarm Localization Sept. 2024 – present

DECAR Lab, McGill University (Prof. James Forbes' Lab.) *Montreal, Canada*

- Increased classification accuracy by 13% for multi-class occlusion detection on UWB radio wave flight data
- Compressed flight data by 2 orders of magnitude while increasing classification accuracy with Sklearn & PyTorch
- Redesigned drone parts with 2x higher resistance to stress loads under FEA simulations in Solidworks

Engineering Intern, AI & ML Research Team May 2024 – Aug. 2024

MDA Space *Toronto Area, Canada*

- Increased image similarity by 10x for the Canadarm 2 meteorite strike detection on the International Space Station
- Implemented an optimization pipeline for Canadarm 3 control systems (Lunar Gateway Space Station)
- Integrated C++ code for autonomous lunar rover testing & worked on field test experiments

Data Scientist July 2021 – Nov. 2023

Perceive Now *Cincinnati, United States (remote, part-time)*

- Led the development of v1 of the full-stack core API, enabling the company to raise 6-figures at an $8M valuation
- Sped up 8x processing speeds to analyze information for 3,600 authors per hour from ORCID and the USPTO
- Led product for 'Customer Intelligence' by building an ETL pipeline with search and sentiment analysis

Drone Research and Development Intern June 2022 – Aug. 2022

Autonomous Control Systems Laboratory, Ltd *Tokyo, Japan*

- Created LSTM neural network models to predict motor vibration in heavy-lift, industrial drones in Tokyo, Japan
- Implemented OpenCV's feature tracking algorithms to sort 1GB+ of drone video frames

Projects

Distillation of State Space Language Models | *ICML 2024 Workshop Paper* Oct. 2023 – July 2024

- Implemented natural language evaluation benchmarks for state-space models under joint knowledge transfer.
- Accepted at ES-FoMo-II @ICML 2024 (workshop), available: arXiv:2401.17574

1/10-Scale Self-Driving Car | *BFMC 2024 Semi-Finalist* Oct. 2023 – May 2024

- Developed Kalman filters and finite state machines for autonomous driving based on IMU and vision data.
- Selected to run a live demo in Cluj-Napoca, Romania, as a Top 24 Semi-Finalist worldwide. (demo video)

AGORA: Safe Speech-to-Text Conversion | *NAACL 2024 Workshop Paper* Oct. 2022 – June 2024

- Developed a novel recurrent architecture for safe speech-to-text transcription benchmarking MuTox and Jigsaw.
- Accepted at WOAH @NAACL 2024 (workshop)

Technical Skills

Languages: Python, C/C++, SQL, JavaScript, TypeScript, HTML/CSS, Go, MATLAB, Java
Frameworks: React, Node.js, Flask, NextJS, Expo, Tailwind, FastAPI, ROS
Developer Tools: Git, Google Cloud Platform, VS Code, Azure, Vercel, Postgres, MongoDB, ONNX
Libraries: OpenCV, PyTorch, Keras, Scikit-Learn, NumPy, Matplotlib, Pandas, Ollama
Hardware: CAD, Solidworks, NX, Ultimaker Cura, 3D Printing, Finite Element Analysis, Raspberry Pi, Arduino, ESP-32, Servo Motor Controllers