

Xin Lei Lin

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EDUCATION

University of Toronto – St-George (Trinity College)

Toronto, Ontario, CA

Bachelor of Science – Computer Science Specialist (COOP), and Molecular Genetics Major Aug. 2023 – May 2027

- **Entrance awards:** C. David Naylor Scholar for Leadership (\$20k) & Arts and Science Scholar (\$7.5k)
- **Leadership:** Student Council President, Publication Director of *Le Manifeste* and *The Last Word* (160+ pages), MariHacks & BrébeufHx Vice-President (800+ hackers), competitive programming and Python tutor [\[YouTube\]](#)

EXPERIENCE

Vector Institute

August 2025 – December 2025

(Incoming) Machine Learning Research Intern with [Prof. Michael Brudno](#)

Toronto, Ontario, Canada

- Latent space optimization through dimensionality reduction for Genome-wide association studies (GWAS).

Amazon

May 2025 – July 2025

Software Developer Engineer Intern

Vancouver, British Columbia, Canada

- Working with Relational Database Service (RDS), S3 & Spark to optimize export performance.

MiDATA (University of Toronto)

September 2024 – Present

Machine Learning Researcher with [Prof. Pascal N. Tyrrell](#)

Toronto, Ontario, Canada

- Augmenting low-label segmentation datasets, through mask conditioning with Latent Diffusion Models (LDM).

KITE (University Health Network) and Vector Institute

April 2024 – Present

Computer Vision Researcher with [Prof. Babak Taati](#)

Toronto, Ontario, Canada

- Extending the context window of state-of-the-art image-by-image **ViTPose**-based models to 32-frames videos using **VideoMamba** and **InfiniAttention** for **SMPL human mesh recovery** and **2D keypoint pose detection**.

Kadist (a.k.a Artnow International)

August 2024 – April 2025

Machine Learning Engineer

(Remote) – Paris, France

- Deployed RSONART, an art chain of thought agent with vision and audio capacities. [\[https://www.rsonart.com/\]](https://www.rsonart.com/)
- Integrated Retrieval Augmented Generation (RAG) through history-aware & ensemble retrieval with GPT-4 API.
- Backend with Flask, vector database of **300k webscraped artists & exhibitions** on pgvector and PostgreSQL.

DIRO (University of Montreal)

October 2022 – September 2023

Machine Learning Researcher with [Prof. Houari Sahraoui](#)

Montreal, Quebec, Canada

- Represented **Team Canada** (top 12 projects at nationals) at **ISEF 2023** in Dallas, Texas (**10 awards, \$15k+**).
- Trained and compared four models (CNNs & LSTMs) for American Sign Language to English translation. [\[ISEF\]](#)

PROJECTS

Spydle – A real-time multiplayer word game

September 2024 – December 2024

- Game servers on GCP w/ Kubernetes, Docker, Agones and Redis DB. Java Swing & Springboot Frontend [\[Github\]](#)

Plasmid.AI – iGEM (Top 10 of 500+ teams & Best Model Worldwide)

March 2024 – Present

- Fine-tuned Evo (a Striped-Hyena sequence model) to generate plasmid DNA [\[Github\]](#)

Red Handed – MakeUofT (2nd for Qualcomm and Flow (\$1200))

February 2024

- **3 neural networks** and a robot arm to detect and counter drowsiness w/ Tensorflow & Arduino. [\[Devpost\]](#)

Re.Live – UofTHacks 11 (Cohere 1st Prize (\$1500))

January 2024

- **Stable diffusion** and **Cohere RAG** to create Harry Potter-like dancing albums from static images. [\[Devpost\]](#)

DriveSense – HackTheNorth (Winning Finalist Project)

September 2023

- Mobile app to assist drivers with **vision models** for car plates, traffic lights and road signs (PyTorch). [\[Devpost\]](#)

XChange – ConUHacks VII (Offered Interview at National Bank)

January 2023

- Density estimation for anomaly detection in banking data. Frontend in React & data analysis in C++. [\[Github\]](#)

TECHNICAL SKILLS

Languages: French (Native), English (Native), Mandarin (Fluent), Spanish (International Baccalaureate)

Programming Languages: C/C++, Python, R, Shell (Bash), Java, SQL, Dart (Flutter), JavaScript, HTML/CSS

ML/DS Tools: Torch, CUDA, DDP, Lightning, Tensorflow, OpenCV, Pandas, Numpy, Google Cloud, SciNet (slurm)

Other: Linux/Unix, Docker, Kubernetes, Tmux/Vim/VSCode, Git/GitHub, Flask/Django, React, MongoDB/Postgres