

Xin Lei Lin

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EDUCATION

University of Toronto – St-George (Trinity College)

August 2023 – April 2027

Bachelor of Science – Computer Science Specialist, and Molecular Genetics Major

Annual GPA: 4.0/4.0

- **Entrance awards:** C. David Naylor Scholar for Leadership (\$20k) & Arts and Science Scholar (\$7.5k)

EXPERIENCE

Vector Institute

August 2025 – Present

Machine Learning Research Intern | Advisor: [Prof. Michael Brudno](#)

Toronto, Ontario, Canada

- Generating people's facial structures from their genetic markers using Latent Diffusion Models.

Amazon Web Services

May 2025 – July 2025

Software Development Engineer (SDE) Intern | Team: RDS Export to S3

Vancouver, British Columbia, Canada

- Saved ~ \$8 million/year by optimizing the parallel export to S3 algorithm with EMR, Hadoop Spark, and EKS

MiDATA (University of Toronto)

September 2024 – April 2025

Machine Learning Researcher | Advisor: Prof. Pascal N. Tyrrell

Toronto, Ontario, Canada

- Developed **MedSegGen**, a self-supervised training pipeline using Latent Diffusion Models, with mask conditioning, to augment low-label segmentation datasets, such as for gastrointestinal polyp segmentation.
- **Conference Presentation:** RSNA Radiology Conference & Annual Meeting in Chicago, on November 2025

KITE (University Health Network)

April 2024 – April 2025

Machine Learning Research Intern | Advisor: [Prof. Babak Taati](#)

Toronto, Ontario, Canada

- Developed **InfiniPose**, an autoregressive video pose detection model that extends ViTPose, an image-based model, to infinite frame-lengths using InfiniAttention and a novel Memory Encoder to contextualize previous heatmaps.

Kadist (Artnow International)

August 2024 – April 2025

Machine Learning Engineer

(Remote) – Paris, France

- Developed **RsonArt**, an artist agent with RAG through history-aware & ensemble retrieval for Kadist.
- Webscraped 300k artists and artworks into a pgvector vector database on PostgreSQL.

DIRO (University of Montreal)

October 2022 – September 2023

Machine Learning Researcher | Advisor: [Prof. Houari Sahraoui](#)

Montreal, Quebec, Canada

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

PROJECTS

Spydle – A real-time multiplayer word game

September 2024 – December 2024

- Game servers hosted on GCP with Java Spring, Kubernetes, Docker, Agones and Redis DB.

[\[Github\]](#)

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

March 2024 – Present

- Fine-tuned Evo (a Striped-Hyena genomic model) to generate plasmid DNA with antibacterial resistance

[\[Github\]](#)

Red Handed – MakeUofT (2^{nd} for Qualcomm and Flow)

February 2024

- 3 neural networks and a robot arm to detect and counter drowsiness with Tensorflow & Arduino.

[\[Devpost\]](#)

Re.Live – UofTHacks 11 (Cohere 1^{st} Prize)

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

ML/DS Tools: PyTorch, CUDA, Tensorflow/Keras, GCP, AWS (RDS/S3/EMR/EKS), MySQL/MongoDB/Postgres

Other: Linux/Unix, Docker, Kubernetes, Hadoop Spark, Tmux/Vim, Git/GitHub, Flask/Django, React \LaTeX