

Xin Lei Lin

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EDUCATION

- University of Toronto – St-George, affiliated with Trinity College** Toronto, Ontario, CA
Bachelor of Science in Computer Science, and Molecular Genetics – CGPA 3.94 Aug. 2023 – May 2027
- Awards: C. David Naylor Scholarship: for a first-year student with **oustanding leadership**. (20000\$)
Arts and Science Scholar: for students who have maintained **high academic standing**. (7500\$)
(Deferred) UWaterloo President's Entrance scholarship for **Software Engineering** (\$2000)
 - Courses: Analysis, Linear algebra 1 (enriched) and 2, Enriched Theory of Computing, Intro. CS, Bio, and Chem.
- Collège Jean-de-Brébeuf (Secondary), and Marianopolis College (CÉGEP)** Montreal, Quebec, CA
International Baccalaureate, and Honours Pure and Applied Science Aug 2017 – May 2023
- Leadership Award** for contribution as **5-time elected in student council and president**, editor-in-chief of 2 newspapers (40 writers – 160 pages), and Vice-President/organizer of 3 hackathons (combined 600 participants)

EXPERIENCE

- Visiting Research Assistant** | *Vim, Linux, Jupyter and Tensorflow-GPU* May 2023 – September 2023
Université de Montréal - Département d'informatique et de recherche opérationnelle Montreal, Quebec, CA
- Continuation of the research project Artificial Sign Language, with Professor Sahraoui.
- Artificial Sign Language** | [Visit the ISEF Project Board!](#) November 2022 – May 2023
Regeneron International Science and Engineering Fair – More than 15000\$ in awards! Dallas, Texas, US
- Trained various deep learning models (including Dense Neural Networks, CNNs, transfer learning w/ YOLO + ResNet, and LSTM w/ Tensorflow) to translate American Sign Language to English.
 - Implemented an algorithm to detect and encode body signs into skeleton (with OpenCV and MediaPipe). Performed data augmentation (**by a factor of x128**) (with C++, Numpy and Pandas).
 - Web scraping tutorials of American Sign Language (using BeautifulSoup and C++) to extract 1000 hand signs (**30 gb of videos**, treated w/ OpenCV, Numpy and C++)! [GitHub Repo!](#) [Demo Video!](#)
 - Awards: *Science Fair winner and other medals (2x), Hydro-Quebec First Prize for Science Fair, Ministry of Economy, Innovation and Technology prize, IEEE Best Project in IT, OCTAS Cegep award in IT, and other*
- Frontend Developer** | *JavaScript, HTML, CSS, and Bootstrap* May 2022 – September 2022
HauteTechOrientale | <https://hautetechorientale.com/> Montreal, Quebec, CA
- Designed and deployed from scratch the company's website using JavaScript, HTML and CSS with Bootstrap.
- Competitive Programming Tutor** | [View the first tutorial \(in French\)!](#) January 2022 – February 2023
Taught C++ and Python through 5 online tutorials (2 hours) and in-person sessions w/ 25 students and 300 views!

PROJECTS

- SpaCey – UTRA** | (Best use of Flow and Starknet award) | *Tensorflow, Mediapipe and openCV* January 2024
- Created a 3000 datapoint database, with 3 hand gestures. Reduced the dimensionality of the dataset w/ mediapipe for pose-tracking (attained 96% accuracy in less than 1 hour for 150 epochs with 2 dropout layers, and 3 DNN layers)! Implemented remote bluetooth control to control the rover through hand signs. [Visit Devpost!](#)
- HackTheNorth 2023 – DriveSense (Finalist Project)** | *PyTorch, React Native, Streamlit* September 2023
- Fine-tuned YOLOv5 and YOLOv8 with PyTorch for 3 computer vision models (1) car plate detection, (2) traffic light colours, and (3) road sign detection. Implemented a backend with Django, hosted on Repl.it.
 - Developed a novel car speed algorithm detection with Computer vision, based on the size of the car plate, correlated with GPS data from a React mobile app. Secondary frontend with Streamlit. [Visit Devpost!](#)
- Classif.ai – STEMistHacks** | *React, HuggingFace LLMs* [Visit Devpost!](#) June 2023
- Fine-tuned HuggingFace LLMs to summarize videos, and notes into Flash Cards w/ React.
- XCHANGE – ConUHacks** | *C++, Anomaly Detection* January 2023
- Animated banking data through React, HTML, and CSS. Data analysis and summarization through C++. Usage of density estimation (unsupervised learning) for anomaly detection in banking database. [Github Repo!](#)
- AIBERT – Science Fair** | *Naive Bayes, LSTM, BERT + Flutter (Dart) w/ Speech Rec.* September 2021 – May 2022
- (**1000\$ in awards**) Implemented ML models w/ 10000 messages to detect spam messages. Binary search for spam numbers. Mobile dev w/ Flutter. Speech Recognition w/ Python. Flask as REST API on Repl.it. [Github Repo!](#)