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)

Collège Jean-de-Brébeuf (Secondary), and Marianopolis College (CÉGEP) Montreal, Quebec, CA
International Baccalaureate, and Honours Pure and Applied Science   *Aug 2017 – May 2023*
- **5-time elected president and student council**, editor-in-chief of **2 newspapers (40 writers – 160 pages)**, and Vice-President/organizer of **3 hackathons** (800+ participants - largest high school hackathon in Quebec).

EXPERIENCE

DIRO (Université de Montréal) and Regeneron ISEF   October 2022 – September 2023
Research Intern   *Dallas, Texas and Montreal, Quebec*
- **1 of 8 teams** on Team Canada for ISEF 2023 – **$15000+ in awards**
- **Computer vision research** to translate American Sign Language to English with Professor H. Sahraoui
- Data Analysis and Webscraping in Python and C++. Computer vision with OpenCV, Tensorflow and MediaPipe.
- Presented 5 models (**LSTM, DNNs, CNNs, RNN, transfer learning**) to translate **25 gestures**.
- Performed data augmentation **(x128)** to obtain the largest dataset for ASL in the world with C++ and Numpy.
- ISEF Project Board   GitHub   Demo Video

Haute Tech Orientale   May 2022 – September 2022
Frontend Developer   *Montreal, Quebec, CA*
- Designed and deployed https://hautetechorientale.com using JavaScript, HTML and CSS with Bootstrap.

NOTABLE PROJECTS

Red Handed – MakeUofT (2nd for Qualcomm and Flow ($1200)) | *TF and Qualcomm HDK*   February 2024
- Integration of 3 computer vision models with (custom dataset of more than 7000 datapoints) for drowsiness detection with Tensorflow, MediaPipe and OpenCV. 90% and 95% accuracy on testing with 150 epochs.
- Slapping machine, that can adjust to the user's height with with Arduino, ESP32 connected via bluetooth, and Java app on the Qualcomm HDK8450. 3D printing design for the rotors and slapping mechanism.   Devpost

Re.Live – UofTHacks 11 (Cohere 1^{rst} Prize ($1500)) | *React, Stable Diffusion and OpenPose*   January 2024
- Integrated Cohere RAG, and classification to sift through a dataset of songs and images based on the user's mood.
- Implemented a Stable Diffusion Algorithm with openPose which transposes dance moves onto people in static images, making them dance! Frontend was created with React.   Devpost

SpaCey – UTRA (Best use of Flow & Starknet ($1000)) | *Tensorflow, C++ and React*   January 2024
- Implemented a remotely controlled rover with hand signs and decentralized cryptocurrency for task distribution.
- Created a 3000 datapoint database for 3 hand gestures. Reduced the dimensionality of the data with MediaPipe for pose-tracking (96% accuracy for 150 epochs with with 2 dropout layers and 3 DNN layers).   Devpost

DriveSense – HackTheNorth (Winning Finalist Project) | *Torch, React, OpenCV, Django*   September 2023
- Developed a **mobile application** to assess a user's driving quality with custom algorithms to measure distances by correlating the car plate size, GPS data and speed fluctuation, integrated with a Django backend.
- Fine-tuned YOLOv5 and YOLOv8 with PyTorch for 3 computer vision models: car plate detection, traffic light colour detection and road sign detection. Mobile application with React Native.   Devpost

AIBERT – Science Fair ($1000 in various awards) | *NLP, Flutter (Dart), SQL*   September 2021 – May 2022
- Implemented BERT, Naive Bayes and LSTM with 10000 messages for bilingual spam message detection.
- Implementation of a database of 1 million spam numbers with PostgreSQL. Speech Recognition with Python.
- Flutter mobile application which can analyze messages, and calls. Flask as REST API on Repl.it.   Github