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 | May 2023 – September 2023
Université de Montréal - Département d'informatique et de recherche opérationelle *Montreal, Quebec, CA*

- Continuation of the research project Artificial Sign Language, with Professor Sahraoui.

Artificial Sign Language | Click to Visit the Project Board! November 2022 – May 2023
Regeneron International Science and Engineering Fair – More than 15000$ in cumulated 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).
- Webscraping tutorials of American Sign Language (using BeautifulSoup and C++) to extract 1000 hand signs (**30 gb of videos**, treated w/ OpenCV, Numpy and C++!) Visit the GitHub Repo! Demo Video (in French)!
- ***Awards include**: Science Fair winner and other medals (2x), Hydro-Quebec Top Prize for Science Fair, Ministry of Economy, Innovation and Technology prize, IEEE Best Project in IT, OCTAS Cegep award in IT, and other*

Software Engineer May 2022 – September 2022
HauteTechOrientale | Visit the company website! *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

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 Project Board!

Classif.ai – STEMistHacks | *React, HuggingFace LLMs* Visit the Project Board! June 2023

- Fine-tuned HuggingFace LLMs to summarize voice recordings, school notes, and live recordings into Flash Cards.

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. Visit the Github Repo!

AIBERT – Science Fair| *(1000$ in awards!)* September 2021 – May 2022

- LSTM, Naive Bayes Classifier and BERT to detect spam messages and calls. Mobile dev w/ Flutter. Speech Recognition w/ Python. Flask as REST API on Repl.it. Visit the Github Repo!

Technical Skills

Languages and Libraries: C++, Python (Jupyter, Tensorflow, OpenCV, MediaPipe, PyTorch, Pandas, Numpy, MatplotLip, HuggingFace), Dart, JavaScript, HTML/CSS, Java
Tools: Linux, Vim, Git, Flutter, Flask, DJango, React, Bootstrap