# Junyou (Simon) Li

+1 647-949-6654 | simonjunyou.li@gmail.com | simonjunyouli.github.io | linkedin.com/in/junyou-li/

## TECHNICAL SKILLS

**Languages:** Python, C, C++, SQL, R, Java
**Tech:** PyTorch, TensorFlow, NumPy, Pandas, scikit-learn, AWS, GCP, CUDA, Docker, Spark, Kubernetes

## EDUCATION

| | |
|---|---|
| **University of Waterloo, Candidate for Bachelor of Computer Science, Honours** | 2026 (Expected) |
| **Swiss Federal Institute of Technology in Lausanne, Erasmus for Master of Computer Science** | 2024 |

## EXPERIENCE

**National Research Council Canada** — May 2023 - Present
*Machine Learning Research Assistant* — *Waterloo, CA*
- Achieved **SOTA 98.75%** audio classification acc. on ESC-50 by implementing a **BEATs** fine-tuning pipeline
- Investigated **semantic-rich tokenizers**' and **video transformers**' efficacy for gait analysis
- Researching **diffusion** and GAN based **Image-to-Image Translations** solution for speech enhancement
- Developing and evaluating a TENG-based **Cross-Modal Generation** pipeline for audio captioning

**Eon Media** — Sep 2022 - Dec 2022
*Machine Learning Intern* — *Toronto, CA*
- Built an End-to-End **AWS docker** deployment **parallel processing pipeline** to consume 1,000+ 2hr videos daily from 13 models with **<10** EC2 Instances
- Designed a face recognition pipeline by integrating **RetinaFace** for detection & **FaceNet** for feature extraction
- Implemented an **automated annotation** pipeline with Community Detection and Active Learning

**Watolink** — Nov 2021 - Dec 2022
*Artificial Intelligence Engineer* — *Waterloo, CA*
- Developed an **EEG signal processing API** for a mind-controlled communication system
- Deployed **CCA** with **KNN** and **IT-CCA** to classify neural activities that reached **99.7%** accuracy

## PUBLICATIONS & MANUSCRIPTS

"A Data-Driven Environmental **Sound Classification** System with Acoustic TENG", submitted to IEEE CCECE 2024

"Self-Powered TENG for Environmental Sound Monitoring", Waterloo Nanotechnology Conference 2024

"**Vision Transformers** for Age Prediction from Gait Energy Image Data", CVIS 2023

## PROJECTS

**Bert Simpson** — Oct 2023 - Dec 2023
- Built & deployed a **BERT**-driven Twitter Sentiment Analysis system that reached **91%** accuracy

**Deep Reinforcement Trading Agent** — Sep 2023 - Present
- Designing **Deep Reinforcement Learning** for trading strategies and **backtesting** for evaluation & refinement

**7-Letter Scoring Scheme** — Sep 2020 - May 2021
- Extended **Nussinov and Jacobson model** with **7-letter scoring scheme** to optimize SAR-CoV2 vaccine
- Achieved **similar effectiveness** while being **29% more stable** compared to **Pfizer** COVID-19 vaccine

**Haystackfs** — Dec 2021 - Dec 2022
- A verified Discord bot for fast and secure file search used by **42k users** in **380+ servers** to manage **1M+ files**

## ACCOMPLISHMENTS

| | |
|---|---|
| **NSERC Undergraduate Student Research Award** | 2024 |
| **1st at the International NeurotechX Competition** | 2022 |
| **J.P. Morgan Chase & Co, Software Engineering Virtual Experience** | 2022 |
| **Top 10 Globally in VEX Skills Challenge; Qualified for World Championship '20** | 2020 |
| **15th in Canada Senior Men Sabre; Captain of Varsity Fencing & Waterloo Fencing Club** | 2022 - Present |