Hongyu Chen

Obsessed with human intelligence and culture

310 Bloor Street West
Toronto, M5S1W4
(647) 890-0267
hychen.ut@gmail.com
linkedin.com/in/hyu-chen/

EXPERIENCE

Vector Institute, Toronto— *Machine Learning Researcher*   May 2021 - PRESENT

- Implemented *Input complexity: out-of-distribution detection with likelihood-based generative models* with 12 custom types of augmented images. Second author on *Benchmarking the Latest Generative Model Based Anomaly Detection Methods.*
- Submitting *A Zest of LIME: Towards Architecture-Independent Model Distances* as the second author, to ICLR 2022 Experimented Zest with AdaBoost, DNN and tabular data for detecting illegal fairness editing on explainable models.
- Thesis: *Differentiating Neural Network Checkpoints by Local Loss Landscapes*, supervised by Prof. Nicolas Papernot.

Qualcomm, Toronto— *Machine Learning Research Engineer*   Sept 2020 - Sept 2021

- Submitting *Optimizing Ultra Low Bit Quantization of Neural Networks* as a co-first author to TinyML 2022.
- Built an efficient ML framework that integrates SOTA model compression and optimization algorithms for embedded AI.
- Built an ML research codebase for large-scale experiments, hyperparameter optimization and analysis of results.
- Contributed to quantization modules in embedded AI productional codebase.

Synced, Toronto— *Business Intelligence Analyst*   May 2020 - Aug 2020

- Co-authored *AI Technology Development Report 2020*, quantifying research and engineering progress in CV, NLP, RL, IoT, AI Safety etc., and automating text/tabular data crawling, mining and visualization for the report.
- Read papers and articles and released weekly summaries for the latest NLP research and industry advances independently.

University of Toronto Machine Intelligence Student Team, Toronto— *President*   May 2019 - Jul 2020

- Led a machine learning club with 50 executive members. Facilitated 5 student-led ML projects.
- Connected 1000+ community members with speakers from Vector Institute, NVIDIA, Google Brain, Microsoft and more.

MannLab, Toronto— *Brain-Computer Interface Researcher*   Apr 2019 - Jul 2019

- Used LED lights, circuit boards, 3D printers, embedded programming and brain signal processing technologies to build a feedback loop so that we can visualize with a colour spectrum for what human eyes are seeing.

EDUCATION

University of Toronto, Toronto— *BASc, Engineering Science, Machine Intelligence*   Sept 2017 - May 2022

CGPA 3.35/4.0, Course Average 80.5/100, Dean's Honour List

Studied computer programming, information theory, signal processing, machine learning, ML security & privacy, and NLP

PROGRAMMING & PROJECTS

Python, C, Julia, MATLAB | Linux, GitHub, CUDA, Shell, Slurm | Pytorch, NumPy, Pandas, Ray, ScikitLearn, SciPy, OpenCV, Matplotlib, SpaCy, NLTK, Whoosh, TensorFlow, ONNX, Flourish | PIC, Arduino, RaspberryPi

Lane anomaly detection and cone deployment robot | End-to-end audio denoising on mobile devices | Eye Itself as a Camera: Sensor, Integrity and Trust (ACM 2019) | Binary neural network for CNNs | Sentiment analysis and topic modelling for news | Seq2Seq translation between English and French using multiheaded attention