

Jason Wang

jjh.wang@mail.utoronto.ca | [linkedin.com/in/jason-jh-wang](https://www.linkedin.com/in/jason-jh-wang) | github.com/wj-jason

EDUCATION

University of Toronto

2027 Graduation

BASc in Electrical & Computer Engineering, Minor in Artificial Intelligence

Toronto, ON

- **89.8% - 3.95/4.0 - Deans List Honours**
- **Extracurriculars:** Machine Intelligence Student Team, Quantitative Finance Lab
- **Competitions:** Hack the Globe 2024, Clarke Student Design Challenge 2024, IEEE MakeUofT 2024
- **Awards:** First Year Research Fellowship (10 recipients of 1400 students)

EXPERIENCE

Distributed Systems Researcher

May 2024 - August 2024

iQua Group - University of Toronto

Toronto, ON

- Developing algorithms to refine communication topology structures and optimize MPI/NCCL collectives in GPU datacenters to expedite LLM training and lower HPC costs.

Machine Learning Engineer

March 2024 - August 2024

Aercoustics & UofT Machine Intelligence Student Team

Toronto, ON

- Developing end-to-end multi-label audio transformer pipelines, looking to leveraging acoustic tokenizers to train SSL models via knowledge distillation.
- Created data processing modules in Python to parse SQLite databases and extract features from audio snippets.
- Optimized benchmark models by 70% through hierarchical classification motivated by poor class distribution.
- Developing lightweight hierarchical classification library in Python catered to Aercoustics use case.

Machine Learning Researcher

April 2023 - Ongoing

National Research Council of Canada & National Oceanic and Atmospheric Administration

St. John's, NL

- Developed deep computer vision models using PyTorch to autonomously classify marine species resulting a [conference abstract](#) and journal paper (in progress).
- Improved accuracy by 165% in 1 week with iterative training, hyperparameter tuning, and data augmentation.
- Outperformed all other proof-of-concepts initiating further collaboration between NRC and NOAA.

Co-founder & CTO

Sept 2022 - Ongoing

LearnFreely

St. John's, NL

- Co-founded educational charity based in St. John's NL offering educational support to over 50 students.
- Led team to develop generative AI tool to create customizable problem sets from a PDF scan of notes.

SKILLS

Languages & Tools: C/C++, Python, PyTorch, TensorFlow, Hugging Face, Docker, Bash, Git, Linux, Javascript

Concepts & Coursework: Computer Vision, ML/AI, Linear Programming, Calculus, Linear Algebra, Topology

SELECTED PROJECTS

Lightweight Hierarchical Classification Library in Python | [Hierarchical Classification](#)

In progress

- Developing a lightweight hierarchical classification library in Python to be used for classification tasks with high label granularity and poor class distribution.
- Implementing support for hot swappable PyTorch and Tensorflow classifiers at each parent node.

Deep Learning Framework with NumPy | [Neural Networks From Scratch](#)

June 2023

- Used NumPy to created a modular deep neural net framework from scratch.
- Documented mathematical derivations of forward pass, gradient descent, and all other relevant components.

Topology Evolving Neural Networks in Python

June 2023

- Implemented a genetic topology and weight evolving artificial neural network to play Flappy Bird using Python using the [NeuroEvolution of Augmenting Topologies \(NEAT\)](#) algorithm.