

Tom(Tianze) Yang

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SKILLS

- Senior student researcher with 2+ years of experience in fulfilling data analysis tasks through ML and statistical methods.
- Proficient in Python(Flask, Pytorch, Transformers, Tensorflow, Pandas), R, SQL, Latex
- Great experience with LLM prompt engineering & fine-tuning, Linux, Ubuntu, Google Cloud, Time-Series analysis, Copula
- Fluent in English, Chinese, and French(intermediate)

PUBLICATION:

- [AI Clinics on Mobile \(AICOM\): Universal AI Doctors for the Underserved and Hard-to-Reach](#) (ArXiv,co-First Author,sent for peer-review)
- [AICOM-MP: an AI-based Monkeypox Detector for Resource-Constrained Environment](#) (ArXiv,co-First Author,sent for peer-review)

EDUCATION

McGill University

M.Sc.(Thesis) in Computer Science, Supervisor: Prof. Xue Liu

B.Sc. in Honours Probability and Statistics(DS & ML Path), Minor Computer Science

---- GPA: 3.85

Montreal, CA

Starting in Sep 2023

Sep 2020-May 2023

PROFESSIONAL EXPERIENCE

Nebula AI

ML Developer

- Build and deploy LLM and generative AI on web3OS Lagrange Space using Llama 2, Stable Diffusion, Docker, Python

Montreal, CA

Sep 2023-present

Shenzhen Institute of Computing Science

NL2SQL Project Leader, Research Intern, PI: Dr. Weijie Ou

- Developed a LLM-based text parser using Python Transformers and Llama2-7b, achieved 70% accuracy on the task of transforming natural language to SQL Query (NL2SQL)
- Fine-tuned Llama2-7b for NL2SQL task using QLoRa and Peft, achieved 187.56% improvement in execution accuracy.
- Augmented Llama2-tb for NL2SQL task using Chain-of-Thought, few/zero-shot prompting, role-play prompting techniques, achieved 123.5% improvement in execution accuracy
- Gained hands-on experience of YashanDB on Linux and built a NL2SQL engine for YashanDB using Python and BASH.

Shenzhen, China

Jun 2023-Sep 2023

McGill University & MILA

Project co-Leader, Research Intern, PI: Prof. Xue Liu, Dr. Shaoshan Liu

- Developed the State-of-the-Art Monkeypox Screening AI using Python Tensorflow, reached >98% accuracy and > 1000 downloads.
- Developed an AI-powered Android App using Android Studio and float-16 quantization, achieved >98% accuracy
- Designed a [website](#) and deployed a Monkeypox screening AI to its web interface, using Angular, Python Flask, Google Cloud
- Entered MIT Solve challenge

Montreal, CA

Sep 2022-Present

McGill University

AI Research Intern, PI Prof: Jianguo Xia

- Implemented and deployed a public academic forum named [OmicsForum](#) (with over 725 users) using discourse, docker in Ubuntu
- Designed, trained, and deployed a chatbot on MetaboAnalyst, which has been used by >500,000 researchers, using Python, JS, JAVA
- Built a metabolomic tools search engine for SystemsAnalyst using open-source software MeiliSearch

Montreal, CA

Jul 2021-May 2023

RELEVANT RESEARCH EXPERIENCE

McGill University

Quantitative risk analyst, PI: Prof. Christian Genest

- Developed a Time-Series model of the Value-at-Risk of cryptocurrencies using ARMA+GARCH framework and R
- Examined the correlation between cryptocurrencies using Copula method and R

Montreal, CA

Sep 2022-Jan 2023

ML Intern, PI: Prof. Jean-Baptiste Poline

- Extracted database usage information from neuroscience articles using Linear Regression model & Sequential Neural Network model, achieved >80% accuracy
- Pre-processed neuroscience articles using data cleaning tools and Python.

Sep 2021-May 2022

HONORS & AWARDS

- First-Class-Honours in Probability and Statistics (2023)
- William Macdonald Scholarship (2020-2023)
- Research Assistant Stipend at XiaLab (2021-2023)
- Research Assistant Stipend at Weichenthal's Lab (2021)
- McGill Science Dean's Honor List (2020-2021)
- Wing Hing Chan Scholarships in Science (2020-2021)
- McGill Emerging Leaders Certificate (2021)
- Huawei Seeds for the Future Certificate (2021)
- Earnest Fox Award of Mechanics, Marianopolis College Scholar, Marianopolis College Entrance Scholarship (2018)