

Yuzhi Tang

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RESEARCH/EXPERIENCE

MACHINE LEARNING GROUP | UNIVERSITY OF TORONTO | [GITHUB](#)

Jun 2024 - Present | Toronto, ON

- Developed an automatic pipeline to identify and decompose risks in LLM agent trajectories via prompt-tuning. Extended [ToolEmu](#) to perform large-scale evaluation on SOTA LLM agents.
- Built an inference pipeline with LLM agents using [LangChain](#) and [HuggingFace Transformers](#), enhancing LLM serving throughput by 24x with [vLLM](#). Supervised by Prof Chris Maddison.

SOFTWARE ENGINEERING GROUP | UNIVERSITY OF TORONTO

May 2023 - Present | Toronto, ON

- Developed a framework for evaluating vision neural network reliability and debugging defects by extracting and analyzing feature-specific neurons.
- Built the experiment codebase in [TensorFlow](#) and [PyTorch](#). Evaluated method on four benchmark datasets and performed case study. Supported by the NSERC USRA award (\$7500) and supervised by Prof Marsha Chechik.

SUNNYBROOK RESEARCH INSTITUTE | ML RESEARCHER | [GITHUB](#)

Jan 2023 - Apr 2023 | Toronto, ON

- Designed and implemented a [Convolutional Recurrent Neural Network](#) for end-to-end sleep stage classification with multimodal data in [PyTorch](#).
- Experimented with weighted CE loss, engineered features, auxiliary training objectives, and ensembling to improve classification F1 by more than 10%. Accepted to poster presentation at [SLEEP2024](#). Supervised by Dr Andrew Lim.

MIDATA LAB | ML STUDENT RESEARCHER | [POSTER](#)

May 2022 - Aug 2022 | Toronto, ON

- Adapted contrastive [self-supervised](#) pertaining pipeline to ultrasound knee effusion segmentation and achieved significant 3.9 mIoU improvement.
- Built experiments with ResNet-50 using [PyTorch](#) and [MMSeg](#) library and explained model prediction with t-SNE visualization using [Scikit-learn](#). Accepted to poster presentation at Undergraduate Research Conference 2022. Supervised by Prof Pascal Tyrrell.

GAME OF APPS | SUMMER INTERN IOS APP DEVELOPER | [APP](#)

Jun 2019 - Aug 2019 | Richmond, BC

- Developed the calendar, feedback, and achievements pages for the [Game of Apps](#) app (rated 4.9/5 on App Store and used by 70+ schools) using [Xcode](#) and [Swift](#).
- Designed responsive UI with dynamic constraints and implemented [multi-threading](#) for efficient backend data loading.

PUBLICATIONS

- [1] **Y. Tang** and C.B. Hu. "DeFeaT: Feature-based Reliability Testing of Deep Neural Networks through Feature-specific Neurons". In: [In Submission](#) (n.d).
- [2] A. H. Zhang, C. Li, **Y. Tang**, A. He-Mo, N. Montazeri Ghahjaverestan, M. Goubran, and A. S. P. Lim. "A deep learning model for inferring sleep stage from a flexible wireless dual sensor wearable system without EEG". In: [SLEEP](#) (2024).
- [3] Z. Ren*, X. Xia*, **Y. Tang***, B. Zhao, C. P. Wong, and D. Xiao. "Asynchronous Detection of Erroneous Behaviors in Human-Robot Interaction with EEG: A Comparative Analysis of Machine Learning Models". In: [bioRxiv](#) (2023).

EDUCATION

UNIVERSITY OF TORONTO

MASTER OF SCIENCE IN APPLIED COMPUTING

- AI CONCENTRATION

Sep 2024 - Dec 2025

UNIVERSITY OF TORONTO

HONOURS BACHELOR OF SCIENCE - WITH

HIGH DISTINCTION

SPECIALIST IN COMPUTER SCIENCE,

MAJOR IN COGNITIVE SCIENCE,

MINOR IN MATHEMATICS

Sep 2020 - Jun 2024

Cum. GPA: 3.92 / 4.0

COURSEWORK

Neural Networks and Deep Learning (A+)

Intro Machine Learning (A+)

Intro Image Understanding (A+)

Intro Artificial Intelligence (A+)

Algorithm Design & Analysis (A)

Nonlinear Optimization (A+)

Probability and Statistics (A+)

Intro Databases (A)

SKILLS

PROGRAMMING LANGUAGES

3+ years:

Python

1+ years:

C • Java • Swift

0+ years:

SQL • C++

MACHINE LEARNING TOOLS

[PyTorch](#) • [TensorFlow](#) • [Scikit-learn](#) • [LangChain](#)

• [vLLM](#) • [MMSegmentation](#) • [OpenCV](#) •

[HuggingFace Transformers](#) • [ONNX](#)

OTHER TOOLS

[PostgreSQL](#) • [Slurm](#) • [Xcode](#)

AWARDS

- Intrinsic Error Evaluation during Human-Robot Interaction Competition - IJCAI 2023 1st Place (2023, global)
- NSERC Undergraduate Student Research Award (2023, national)
- ProfiTech Hackathon 3rd Place (2021, global)
- Game of Apps Championships Season 1 Winner (2018, provincial)
- New College Council In-Course Scholarship (2022, 2023)
- Dean's List Scholar (2020-2024)