

Franklin Ma

✉ franklinming.m27@icloud.com  [franklinma27](https://github.com/franklinma27)  [terwo](https://twitter.com/terwo)  franklinma.me

EDUCATION

McGill University

Sep. 2026 – Present

Masters in Computational Linguistics

Montréal, QC

- Advisor: **Prof. Timothy O'Donnell**
- Mila — Quebec AI Institute

University of British Columbia

Sep. 2020 – May 2026

BA in Computer Science and Cognitive Systems, Emphasis in Language

Vancouver, BC

- Grade: 90.4/100
- Graduate Courses: Topics in Semantics
- Societies: Japan Association, Cognitive Systems Society, Tandem Language Exchange, NLP Reading Group

University of Tokyo

Sep. 2022 – Aug. 2023

USTEP Exchange Program

Tokyo, Japan

- Grade: A
- Societies: Komaba Association for Children, Piano Club, Volleyball Club

CONFERENCE PUBLICATIONS

- [1] Changbing Yang, **Franklin Ma**, Freda Shi, and Jian Zhu. LingGym: How Far Are LLMs from Thinking Like Field Linguists? In: *Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing*. 2025.
Outstanding Paper Award
Oral Presentation
- [2] **Franklin Ma** and Alan J. Hu. Logically Constrained Decoding. In: *Proceedings of the 3rd Workshop on Mathematical Natural Language Processing at EMNLP*. 2025.
Oral Presentation

RESEARCH EXPERIENCE

Research Scientist Intern

Jan. 2026 – Apr. 2026

AMD

Vancouver, BC

- Developed a **synthetic benchmark generation** framework that produces realistic hardware specifications with ground-truth formal logic annotations for evaluating frontier LLMs on downstream hardware tasks.
- Built a **neurosymbolic** verification and evaluation backend combining **Z3 SMT** consistency checking of **autoformalization** outputs with **LLM-as-a-Judge** scoring to assess **temporal semantics** understanding.

Research Assistant

Sep. 2024 – Present

*Speech, Language, and Interactive Media Lab with **Jian Zhu***

Vancouver, BC

- Investigated how **authorship embeddings influence style transfer** in embedding models, and how these embeddings reveal coding style across programming languages
- Processed interlinear glossed text from **18 low-resource languages** to create the LINGGYM benchmark, showing that targeted prompts improve LLM inference accuracy across different linguistic aspects by up to **~20%**
- Fine-tuned models with **LoRA adapters** and **SFTTrainer**, which reduced atypical speech recognition errors by **~10%**

Research Assistant (NSERC USRA)

May 2025 – August 2025

*Integrated Systems Design Laboratory with **Alan Hu***

Vancouver, BC

- **Extended constrained decoding** beyond syntactic constraints to enforce **formal, logical constraints** with proof-of-concept implementations for chess and propositional resolution proofs, ensuring LLMs never generate illegal moves or unsound proof steps
- Demonstrated that logically constrained decoding **enables small open-source LLMs** to solve problems that even frontier models (ChatGPT-5, Claude Sonnet 4) solve incorrectly

Research Assistant (NSERC USRA)

May 2024 – Aug. 2024

*Human-AI Interaction Lab with **Cristina Conati***

Vancouver, BC

- Refactored an **adaptive user modeling framework** for improving extensibility to new Exploratory Learning Environments and implemented WEKA Machine Learning Algorithms in Python
- Applied **PCA** to enhance clustering efficiency for high-dimensional data and **Bayesian optimization** for hyperparameter tuning

TEACHING

Computer Science Teaching Assistant

Sep. 2021 – Present

UBC Department of Computer Science

Vancouver, BC

- CPSC 320 — Intermediate Algorithm Design and Analysis
Instructors: Steve Wolfman, Patrice Belleville 2025 Winter
- CPSC 416 — Distributed Systems
Instructor: Mike Feeley 2025 Summer
- CPSC 320 — Intermediate Algorithm Design and Analysis
Instructors: Susanne Bradley, Alan Hu, Yuanhao Wei 2024 Winter
- CPSC 110 — Computation, Programs, and Programming
Instructors: Gregor Kiczales, Rik Blok 2024 Fall
- CPSC 210 — Software Construction
Instructor: Paul Carter 2024 Summer
- CPSC 110 — Computation, Programs, and Programming
Instructors: Gregor Kiczales, Paul Carter 2022 Winter
- CPSC 110 — Computation, Programs, and Programming
Instructors: Gregor Kiczales, William J. Bowman, Joanna McGrenere 2021 Fall

Japanese Teaching Assistant

May 2022 – June 2024

UBC Department of Asian Studies

Vancouver, BC

- JAPN 200 — Beginning Japanese II A
Instructor: Kyoko Kobayashi Hillman 2024 Summer
- JAPN 100 — Beginning Japanese I A
Instructor: Nick Hall 2023 Summer

English Conversation Tutor

Oct. 2022 – July 2023

Ouchi International

Tokyo, Japan

- Taught weekly one-on-one basic English lessons, either academic-based or leisure-based, to a total of 6 students
- Corrected students on pronunciation, sentence flow, and used mnemonics to guide their learning

PROFESSIONAL EXPERIENCE

Project Assistant Co-op Student

Sep. 2023 – Apr. 2024

UBC Cloud Innovation Centre

Vancouver, BC

- Collaborated with ~5 stakeholder teams from environmental organizations and other universities to develop open source AWS-based cloud initiatives that range from facilitating medical imaging to hindering invasive plant species
- Documented technical architecture and solution details to ensure transparency, enabling sponsors to easily build upon the proof-of-concept solution
- Led and organized the inaugural Cloud Computing x Generative AI Hackathon for 100 participants to empower them with the tools and knowledge to create innovative AI solutions

Software Developer Intern (Part-Time)

July 2023 – Aug. 2024

Fabrica Communications – Sparkle AI

Tokyo, Japan

- Implemented transaction tracking for a Web3 lottery platform and Firebase Analytics for a cryptocurrency transfer app to research user preferences
- Engineered a multi-threaded web scraping API deployed on Vercel to efficiently extract and organize data into a PlanetScale database for analysis with Business Intelligence Tools

Freelance Software Developer

Jan. 2024 – Mar. 2024

DifferentMatters

Remote

- Conceptualized and implemented from scratch the DifferentMatters' community chat platform with Next.js, Tailwind CSS, React, and Supabase
- Integrated real-time messaging capabilities and maintained unique chat logs for all different user groups

EXTRACURRICULAR ACTIVITIES

Kodomo Kai Helper <i>Komaba Association for Children</i> Volunteered with students from the University of Tokyo and Japan’s Women University to accompany ~30 children from Komaba Elementary School on educational excursions throughout Tokyo	Oct. 2022 – Aug. 2023 <i>Tokyo, Japan</i>
First-Year Representative and Executive <i>UBC Japan Association</i> Facilitated monthly welcome events for ~150 incoming UBC students as First-Year Representative, and organized Japanese cultural events as a Cultural Team Executive to foster community and cross-cultural understanding	Sep. 2020 – Apr 2022 <i>Vancouver, BC</i>

TALKS

Advanced Micro Devices, Inc. (AMD) <i>Invited talk on constrained decoding research</i>	Nov. 2025 <i>Vancouver, BC</i>
EMNLP 2025 MathNLP Workshop <i>Logically Constrained Decoding</i>	Nov. 2025 <i>Suzhou, China</i>
BCNET CONNECT 2024 Tech Summit <i>Student Perspectives: Leadership and Learning in Co-op Experiences</i>	Mar. 2024 <i>Vancouver, BC</i>

HONORS & AWARDS

Research Grants - Canada Graduate Research Scholarship — Master’s (\$27,000) - NSERC Undergraduate Student Research Award (\$6,000) - NSERC Undergraduate Student Research Award (\$6,000)	2026 2025 2024
Honors - Dean’s List - Dean’s List - Governor General’s Academic Medal Bronze	2022 2021 2020
Scholarships - Hugh M Brock Go Global Scholarship (Merit-based to undergraduates in Go Global; \$3000 / \$144,800) - Dorothy and Arthur Holt Scholarship (Merit-based to students in any year and faculty; \$1820 / \$6900) - Trek Excellence Scholarship (Top 5% of year and faculty; \$1500) - Trek Excellence Scholarship (Top 5% of year and faculty; \$1500) - UBC Faculty of Music Entrance Scholarship (Declined; \$3000)	2022 2022 2022 2021 2020
Competitions - Northwest Hacks — Track Winner and Best Design - StormHacks — Track Winner	2024 2024