

Keyu Wang

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Education

McGill University, CGPA: 3.96/4.0

September 2020 – Present

B.Sc. in Computer Science - Internship Program, minor in Geographic Information Science

Montreal, QC

Courses: Applied Machine Learning, Natural Language Processing, Computer Vision, Database Systems, Algorithm Design, Discrete Mathematics, Statistics, Advanced Geographic Information Science

Awards & Scholarships

Undergraduate Student Research Award (USRA) 2024

\$8,700 | Issued by Natural Sciences and Engineering Research Council of Canada (NSERC)

Undergraduate Student Research Award (USRA) 2023

\$9,000 | Issued by NSERC

Research Assistantship Stipend

\$2,550 | Issued by Social Sciences and Humanities Research Council (SSHRC)

Perseverance Award for Women in Technology 2022

\$3,000 | Issued by Quebec Government

McGill University Dean's Honour List 2022

McGill University Dean's Honour List 2021

Research

Mitigating Downstream Model Risks via Model Provenance

May 2024 – Present

Mila, AI Research Institute

Montreal, QC

- Under the supervision of Prof. **Doina Precup** with collaborators from Google & Meta, illustrated model provenance risk in healthcare, identified key properties for early warning systems & proposed an open-source, community-led repository for tracking model provenance to enhance transparency and establish a new standard for responsible model management.
- As the 1st author, **paper** is accepted to NeurIPS 2024 workshop: Socially Responsible Language Modelling Research, as a poster presentation.

Mapping Western Han: GIS-enabled Historiography for Travel Routes

February 2023 – January 2024

Department of Geography, McGill

Montreal, QC

- Built **project website** from scratch for Historical Geography research project under the supervision of Prof. **Raja Sengupta** and Prof. **Griet Vankeerberghen**, using JavaScript, HTML, Leaflet.
- Automated map digitization for boundary changes throughout 200 years in imperial China, using Python & ArcGIS.

Upcoming: Causal and Fair Machine Learning

January 2025 - May 2025

Provable Responsible AI and Data Analytics Lab (PRADA Lab), KAUST

Jeddah, Saudi Arabia

Upcoming: Graph Neural Networks (GNN) and Optimal Transport

May 2025 - August 2025

Machine Learning and Data Science Unit, Okinawa Institute of Science and Technology (OIST)

Okinawa, Japan

Work Experience

Data Scientist Intern

May 2024 – August 2024

Bell Canada

Montreal, QC

- Conducted data analysis on **Google Cloud Platform**, including query optimization and extensive RegEx work for data extraction. Implemented models from **Hugging Face** & followed Agile methodologies to ensure effective collaboration.

AI & Data Engineering Intern

May 2023 – December 2023

Bell Canada

Montreal, QC

- Built ML algorithms including clustering for Business Intelligence problems using **Teradata SQL**, Python ML frameworks such as **Scikit-learn**.
- Data analysis & engineering support for building training dataset of a Presence-only model about Competitors' Network Speed Analysis, following ETL pipelines.
- Utilized **Agile** methodologies (Scrum) to ensure effective collaboration, using **JIRA Board & Confluence**.

Head Instructor Coding & Game Design

June 2022 – August 2022

Appleby College Camps

Oakville, ON

- Planned course materials for coding and video game design camps, and taught basic Python and GameMaker to over 140 children from 7 to 14 years old.
- Organized weekly showcases & maintained close communication with campers' families for study updates.

Projects

You Are At Where You Tweet: GPT Prompting to Geo-locate Twitter Users | *LLM, AI safety* **April 2024**

- Employed a dataset featuring user-defined locations and tweet texts, the study involved grouping tweets by user, cleaning, and refining input prompts to optimize accuracy.
- Final top-3 accuracy of 47% for worldwide city location inference & 82% for Australian city predictions.

Logistic & Multi-class Regression on IMDB Movie Reviews and News | *Machine Learning, NLP* **February 2024**

- Preprocessing of datasets, feature selection through simple linear regression coefficients and mutual information scores, and developing logistic and multi-class regression models from scratch.

Frame Prediction for Aerial Objects | *Computer Vision, OpenCV, MATLAB* **December 2022**

- Developed object tracking & frame prediction methods for aerial objects in MATLAB using classic (non-AI) computer vision algorithms.

California Gold Rush Historical Storymap | *JavaScript, HTML, MapBox, GeoJSON* **October 2022**

- Visualized the history and impacts of immigration to California during 1848-1869 via a storymap.

Presentations

Socially Responsible Language Modelling Research (SoLaR) workshop at NeurIPS 2024 **December 2024**

- Given poster presentation about the "Mitigating Downstream Model Risks via Model Provenance" paper at NeurIPS workshop in Vancouver, Canada.

Undergraduate Computer Science Research Symposium (UCORE) | LLM, AI safety **September 2024**

- Given poster presentation about the "Mitigating Downstream Model Risks via Model Provenance" project at a school-level research poster session with 60+ attendees.

GIS (Geographic Information Science) Day 2022 | Historical Geography **November 2022**

- As an outstanding student project, invited to give an oral presentation at GIS Day hosted by McGill for presenting a story map visualizing the history and impacts of immigration to California during 1848-1869.

Skills

Programming Languages: Python, Java, C++, C#, HTML/CSS, JavaScript, MATLAB, Bash, OCaml

IDE/Tools: VS Code, Eclipse, IntelliJ IDEA, PyCharm, Jupyter Notebook

Technologies/Frameworks: Linux, Git, GitHub, GitLab, JUnit, JavaFX, Pandas, Sci-kit Learn, TensorFlow, PyTorch

Web Development : XAMPP, React, Node.js

Databases: PostGreSQL, DB2, Teradata SQL, Microsoft SQL, SAS

Video Production : Adobe Premiere Pro, Adobe Lightroom

Spoken Languages: English, Mandarin Chinese(both native fluency), Japanese (JLPT N2)

Leadership / Extracurricular

East2West **April 2023 – Present**

Dancer, Editor

- Danced & edited long videos for a K-pop cover performance crew with a YouTube channel of 1.5 million subscribers, achieving at least 20K views per video.
- Participated in the "2024 K-pop Cover Dance Festival" and won 3rd place in the Canada division.

K-Rave McGill **September 2021 – Present**

Dance Leader

- Led K-POP dance projects by organizing practice logistics, teaching dances, and giving members weekly individual feedback for improvement to ensure performance quality.
- The stage project led in 2024 won the "Most Audience Favourite" piece.

McGill University Chinese Students & Scholars Association **September 2020 – April 2024**

Vice President Media - Senior Advisor

- Directed, filmed & edited creative promotion video content for club sponsors (such as Liuyishou Hotpot, Presotea Montreal, etc.) 3 times yearly as a part of the signed discounting contract, to benefit all McGill Chinese students from receiving 10 to 25% off discounts.
- Co-directed Montreal Lunar New Year Gala 2022 with 100+ performers and 15 staff, actively involved in venue booking, auditions, rehearsals, & stage setup.
- Developed webpages on WeChat Official Accounts for 70+ sponsor stores promotion displays; got 1000+ student users.
- Organized member photoshoot for 70 internal members, involving studio visiting & bookings, creative ideas, pose directing & photography.

References

Dr. Doina Precup

Associate Professor, School of Computer Science

McGill University

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Dr. Raja Sengupta

Associate Professor, Department of Geography

McGill University

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Mr. Nicholas Uhthoff

Senior Manager, Data Engineering

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Dr. Griet Vankeerberghen

Associate Professor, Department of History

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