

Marco Jiralerspong

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[Website](#) | [LinkedIn](#) | [Github](#) | [Google Scholar](#)

EDUCATION

Université de Montréal/Mila | *MSc. Computer Science (Thesis)* *September 2021 – (Expected) August 2023*
Adversarial ML and generative modeling under the supervision of Gauthier Gidel. **GPA: 4.22/4.3**

McGill University | *Bachelor of Arts - Computer Science Major* *September 2017 - December 2020*
Minors in Mathematics and Economics **GPA: 3.92/4.0**

- Dean's Honour List and Major Undergraduate Scholarship (Keyfitz).

Notable Coursework:

- **ML & AI:** Adversarial ML, Deep Learning, ML for Economics, Applied ML, Probabilistic Graphical Models, Artificial Intelligence
- **Math:** Honors Analysis (I-III), Honors Probability, Honors Graph Theory, Mathematical Foundations of ML, Algorithmic Game Theory

SKILLS

Languages: Python, SQL, C++, Java, JavaScript, PHP, HTML/CSS

Tools: PyTorch, NumPy, Linux, Pandas, Matplotlib/Seaborn, Scikit-learn, Git, Docker, Keras

WORK EXPERIENCE

Université de Montréal (IFT 6758A – Data Science) – Teaching Assistant *Fall 2022*

- Created and graded assignment evaluating data scraping capabilities.
- Modified, translated and gave tutorials on wide variety of data science tools (NumPy, Pandas, Sckit-learn, etc.).
- Modified, translated and graded main project on NHL data analysis.

Google - Software Development Engineer Intern *May 2022 - August 2022*

- Working on the Ads Integrity - Actor Intelligence (AI²) team that develops features for detecting bad advertisers.
- Built pipeline framework for easy and customizable end-to-end evaluation of feature usefulness.
- Integrated retrospective evaluation and feature set comparison capabilities into framework.

Amazon Robotics - (Returning) Software Development Engineer Intern *Summer 2020 and Summer 2021*

- Developed C++ simulated robotic workcell that independently finds objects and picks them up with a robotic arm.
- Used RANSAC model and clustering algorithm to create a perception service that identifies objects from a pointcloud and computes an approach position/angle to pick them up in under 50ms.
- Built C++ benchmarking system allowing for easy evaluation of CPU/GPU/Memory performance of different configurations.

Squarepoint Capital - Quantitative Developer Intern *January 2020 - May 2020*

- Helped parallelize various data analysis/model interpretability Python processes through the use of Slurm jobs allowing for order of magnitude performance improvements.
- Created frontend for visualization of model performance (integrating with Q backend) using Streamlit.
- Dockerized backend of ML interpretability/data analysis tools and ported over to a more scalable deployment on GCP.

PAPERS & PROJECTS

Marco Jiralerspong, Joey Bose, Ian Gemp, Chongli Qin, Yoram Bachrach, Gauthier Gidel. *Feature Likelihood Score: Evaluating Generalization of Generative Models Using Samples*. **arXiv 2023 (under review)**. [[Paper](#), [Github](#)]

Marco Jiralerspong, Gauthier Gidel. *Generating Diverse Vocal Bursts with StyleGAN2 and MEL-Spectrograms*. Expressive Vocalisation Workshop & Competition, **ICML 2022**. [[Paper](#), [Github](#)]

Regret Dynamics in Online Clustering - (with Andjela Mladenovic) - [[Paper](#)] *2021*

- Examined regret dynamics of online Follow-The-Leader versions of k-means and Gaussian Mixture Models.

Neural Network Models for Interest Rate Forecasting - [[Paper](#)] *2020*

- Evaluation of MLP, CNN and RNN model performance for interest rate forecasting using FRED-MD database.