Marco Jiralerspong

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EDUCATION

McGill University | Bachelor of Arts – Computer Science Major *Expected: December 2020*
Minor in Mathematics and Minor in Economics **GPA: 3.9/4.0**
- Dean's Honour List and Major Undergraduate Scholarship (Keyfitz). **Major GPA: 4.0/4.0**

SKILLS

Languages: Python, C++, Java, JavaScript, HTML/CSS.
Other: Linux, Git, NumPy, Pandas, Keras, Scikit-learn, MySQL, BeautifulSoup, GCP.

WORK EXPERIENCE

Amazon Robotics – SDE Intern *May 2020 – August 2020*
Worked on a custom architecture for creating and coordinating robotic workcells
- Built a benchmarking system that tests the processing and IO performances of the workcell architecture on different pieces of hardware and with different configurations .
- Helped integrate a third-party visual tool for creating statecharts with the workcell architecture, allowing for automatic generation of configuration files.

Squarepoint Capital – Quantitative Developer Intern *January 2020 – May 2020*
Worked on ML pipeline designed to help automate the creation, improvement and evaluation of ML trading models.
- Contributed to transfer of back-end architecture of ML tools to Google Cloud Platform.
- Helped parallelize various data analysis/model interpretability processes through the use of Slurm jobs.
- Added interpretability measures and statistics requested by researchers.
- Created a front-end for visualization of model performance (integrating with Q backend) using Streamlit.

Network Dynamics Lab - Casual Research Assistant *September 2019 – May 2020*
Contributed to the Digital Democracy Project, gathering and analyzing data pertaining to the 2019 Canadian election.
- Built Twitter bot that was used to send hundreds of surveys to politically engaged Twitter users.
- Analyzed Twitter dataset to compare levels of bot activity for various hashtags.
- Constructed robust data pipeline using Apache Airflow to parse and ingest 20+ million Reddit posts/comments.

McGill initiative in Computational Medicine - Summer Scholar *May 2019 – August 2019*
Summer research internship funded by MiCM and supervised by Professor Jean-Baptiste Rivière.
- Produced figures for research paper using Python scripts to parse, combine and clean over 30 GB of variant data.
- Integrated HaplotypeCaller into exome analysis pipeline for in-depth, statistical variant identification.
- Built part of web interface for GREAT breast cancer research study, allowing clinicians to automatically generate PDF reports (jsPDF), send reminders and keep track of patient progress while updating the LabKey back-end.

PROJECTS

Alternative Metrics for Generative Adversarial Networks – COMP 598 Project *2019*
Analysis of 2 GAN papers and how they use different distance functions to address common problems.
- Performed methodical review of literature relating to various formulations of Generative Adversarial Networks.
- Compared the Kantorovich-Wasserstein/Cramér metrics and how they address many of the issues (mode collapse, gradient loss, etc.) found when training with the more conventional KL divergence.
- Envisaged other potential avenues of research (the unbiasedness of their estimate of the metric, using the metric outside of the GAN framework, etc.).