

Jay Mody

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Skills

Languages Python, C/C++, Java, JavaScript, Shell, SQL, HTML/CSS
Tools TensorFlow, PyTorch, Flask, OpenCV, React.js, Docker, Google Cloud SDK, Git

Experience

Leaders Prize | Top 5 Finalist

Nov 2019 – July 2020

- Placed **Top 5** as an individual against **150+ teams** across Canada competing for **Canada's Largest AI Competition**, offering **\$1,000,000** to the individual/team that best automated the detection of fake news using AI ([article](#))
- Competed against Facebook engineers, ex-Google engineers, Kaggle grandmasters, and post-grad ML researchers
- Achieved **70%** performance compared to the human baseline by combining contemporary research in neural language modeling and document reranking into a multi-stage NLP pipeline using **Python**, **PyTorch**, and **Docker**

Magarvey Lab | ML Engineer

May 2019 – May 2020

- Increased **f-1 accuracy** by **27% (0.62 to 0.79)** for protein substrate prediction by developing a **Python** software package that adapted **BERT** for training and deployment on biosynthetic "languages" (e.g. DNA Sequences)
- Doubled** BERT's efficiency on long sequences by implementing a sliding window averaging algorithm
- Advised lab projects on feasible machine and deep learning approaches to novel research problems in biochemistry with applications in: Computer Vision, Natural Language Processing, and Reinforcement Learning

Awards & Leadership

McCall MacBain International Fellow

Jan 2020 – [Present](#)

- Awarded a **\$24,000** scholarship as **1 of 40 fellows** for the McCall MacBain exchange program awarded to high-achieving undergraduate students who want to expand their University experience by undertaking a full year abroad with the purpose of learning the language/culture of the chosen host country (**Japan**, departing Sept. 2021)

McMaster AI Society | Vice-President

Sept 2019 - [Present](#)

- Increased attendance and club activity by spearheading the club's digital transformation to a unified platform (Microsoft Teams) for all communications and virtual events with our **1400+ members**
- Oversaw all internal operations, logistics, and management of our **50+ member executive team** across **4 divisions**

Canada's Top Student Competition (Scotiabank)

Jan 2019 – Feb 2019

- Placed **1st** overall against hundreds of University students across Canada by competing in 3 rounds of case competitions testing entrepreneurship, creativity, and communication skills ([article](#))

Education

McMaster University | Software Engineering (B. Eng)

Sept 2018 - [Apr 2022](#)

- GPA:** 3.9/4.0
- Google DSC Core Team:** Developing workshops and talks with a focus on AI/ML to a chapter of over 200 students
- Teaching Assistant:** 1Z03 AI Innovative Technologies (Summer 2020) with Rhodes Scholar Prof. Matthew Jordan
- Research Assistant:** C++ computer vision programmer for the Department of Electrical and Computer Engineering
- Notable Courses:** Data Structures and Algorithms, Concurrency, Discrete Math I and II, Databases

Projects

Drone Swarm | C++, OpenCV

github.com/jaymody/hackwescam

- Won **1st place** prize of **\$4000** at Hackwescam 2019 by designing a multi-drone control system for target detection

NumPy-ML | Python, Open Source

github.com/ddbourgin/numpy-ml

- Cut computation time by **50%** for activation function gradient calculations for a popular open source machine learning repository with over **9000 stars** on GitHub