

# Jay Mody

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## Skills

**Proficient** Python, Java, TensorFlow, PyTorch, OpenCV, Scikit-Learn, NumPy, Pandas, NLTK, Shell, Git, Docker  
**Familiar** C, C++, JavaScript, PostgreSQL, SQL, HTML, CSS, Spacy, Scipy, Flask, React.js, SWT, wxWidgets, Plotly

## Education

McMaster University (3.9/4.0 GPA)

Hamilton, Canada

B.ENG IN SOFTWARE ENGINEERING

09/2018 - 04/2022

## Experience

Amazon

Toronto, Canada (Remote)

SOFTWARE DEVELOPMENT ENGINEER INTERN

05/2021 - Present

- Building production-ready ML pipelines to replace Amazon's out-of-stock source-ability systems which generate millions of dollars in revenue each year (**Python, Java, Scala**).

Leaders Prize

Waterloo, Canada (Remote)

TOP 5 FINALIST (NATIONAL AI COMPETITION)

11/2019 - 07/2020

- Placed **Top 5** as a **solo competitor** against **150+ teams** competing in **Canada's Largest AI Competition**, offering **\$1,000,000** to the individual/team that best automated the detection of fake news using AI ([link](#)).
- 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**.

Micheal G. DeGroote Institute for Infectious Disease Research

Hamilton, Canada

APPLIED DEEP LEARNING INTERN

05/2019 - 05/2020

- Applied deep learning research for natural product drug discovery with **Dr. Nathan Magarvey (Python, Tensorflow, TPU)**.
- Increased **f-1 accuracy** by **27%** (0.62 to 0.79) for protein substrate prediction by adapting BERT for protein sequences.
- Doubled** BERT's predict-time efficiency on long sequences by implementing a sliding window averaging algorithm.

McMaster University

Hamilton, Canada

TEACHING ASSISTANT

05/2020 - 05/2021

- 1DM3 Discrete Mathematics for Computer Science**: Sets, Relations, Graphs, Trees, Counting, Probability, Logic, Proofs.
- 1Z03 AI Innovative Technologies**: History, goals, and social impact of AI, taught by Rhodes Scholar Prof. Matthew Jordan.

McMaster University

Hamilton, Canada

UNDERGRADUATE RESEARCH ASSISTANT

05/2019 - 05/2020

- Developed UI components and image processing algorithms in **C++** for an autonomous vehicle video annotation software.

## Awards & Leadership

McCall MacBain | International Fellow

[mccallmacbain.org/mmif](http://mccallmacbain.org/mmif)

Awarded a **\$24,000** scholarship as **1 of 40** undergraduate fellows to fund a 1-year cultural immersion exchange.

McMaster AI Society | Vice-President

[mcmasterai.com](http://mcmasterai.com)

Oversaw all internal operations, logistics, and management of our **50+ member executive team** and **1400+ members**.

Google Developer Students Club McMaster | Workshops & AI Lead

[dscmcmasteru.com](http://dscmcmasteru.com)

Developed and delivered workshops targeted towards student developers on AI and general software development topics.

## Projects

Drone Swarm | C++, OpenCV

[github.com/jaymody/hackwescam](https://github.com/jaymody/hackwescam)

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

Polynomial Expansion | Python, PyTorch

[github.com/jaymody/seq2seq\\_polynomial](https://github.com/jaymody/seq2seq_polynomial)

- Seq2Seq transformer** model for polynomial expansion translation task (achieved exact translation accuracy of 0.915).