Jay **Mody**

✉ jaykmody@gmail.com | 🏠 www.jaykmody.com | ⓰ jaymody | 🔗 jaykmody

Skills

Programming	Python, C/C++, Java, JavaScript, Shell, SQL, HTML/CSS, Git
Data/ML	TensorFlow, PyTorch, OpenCV, Scikit-Learn, Numpy, Pandas, Spacy, NLTK, Transformers
Web/App	Flask, React.js, Docker, Google Cloud SDK, SWT, wxWidgets

Education

McMaster Univesity (3.9/4.0)   *Hamilton, Canada*

B.ENG IN SOFTWARE ENGINEERING   *09/2018 - 04/2022*

- **Google DSC Lead:** 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, Intro to Software Development

Work Experience

Leaders Prize   *Waterloo, Canada (Remote)*

TOP 5 FINALIST (MACHINE LEARNING, DATA SCIENCE)   *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)*
- Top 10 finalist included Facebook engineers, ex-Google engineers, Kaggle grandmasters, startups, 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   *Hamilton, Canada*

MACHINE LEARNING ENGINEER   *05/2019 - 05/2020*

- 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   *01/2020 – 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   *09/2019 - 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)   *01/2019 - 02/2019*

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

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