

Jay Mody

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Skills

Proficient Python, Java, PyTorch, Scikit-Learn, NumPy, Pandas, Shell, SQL, Git, Docker, Kubernetes, gRPC
Familiar Scala, C, C++, TensorFlow, JavaScript, Spark, OpenCV, HTML, CSS, NLTK, Spacy, Scipy, Flask, Plotly

Experience

Machine Learning Engineer Intern | Praxis Pioneering | San Francisco, CA Dec 2021 - March 2022

- Led a team of Kaggle Grandmaster ML Engineers to deliver ML products to our customers (Python, PyTorch, Kubernetes).
- Built and deployed two new customer-facing services from the ground-up within my first 2 weeks of joining the company.
- Built an automation pipeline that saved 100+ hours of manual work per month, removing a major blocker for scaling.

Software Engineer Intern | Tesla | Palo Alto, CA Sept 2021 - Dec 2021

- Halved API latency by converting Tesla's Energy Infrastructure Asset API to gRPC (Scala, Kubernetes).
- De-duplicated thousands of devices in Tesla databases by fixing a silent bug in the device provisioning pipeline.

Software Engineer Intern | Amazon | Toronto, ON May 2021 - July 2021

- Reduced missed customer promises on Amazon.com by 6000 per month by building a prototype ML system that improved the accuracy of item-vendor procurement by 182 basis points (Python, SQL, Spark, Scala).
- Reduced the runtime of an SQL data gathering job 10x by optimizing the SQL query with self-join sub-queries.
- Implemented a data gathering and featurization pipeline in Spark-Scala that builds a dataset from 100+ billion rows of data.

Research Assistant | DeGroot Institute for Infectious Disease Research | Hamilton, ON May 2019 - Apr 2020

- Applied deep learning research for natural product drug discovery with Dr. Nathan Magarvey (Python, Tensorflow).
- Increased f-1 accuracy by 27% (0.62 to 0.79) for protein substrate prediction by adapting BERT for protein sequences.

Projects

National AI Competition Finalist | Python, PyTorch, Docker github.com/jaymody/valerie

- Placed 4th in a \$1,000,000 AI competition as a solo competitor competing against 150+ teams, by combining multiple transformer architectures to classify tweets as either fake or real news. My university [wrote about me on their newspaper](#).

Polynomial Expansion | Python, PyTorch github.com/jaymody/seq2seq_polynomial

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

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.

Spaceship | Python, Tensorflow github.com/jaymody/spaceship

- Rotated bounding box regression on noisy images using convolutional neural networks (achieved mean IoU score of 0.66).

Awards & Leadership

International Fellow | McCall MacBain mccallmacbain.org/mmif

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

Vice-President | McMaster AI Society mcmasterai.com

- Oversaw all internal operations, logistics, and management of our 50+ member executive team and 1000+ members.

Contributor | Stackoverflow stackoverflow.com/users/11070463/jay-mody

- Answered 100+ questions on Stackoverflow (Python or ML related), which have been viewed over 300k+ times.

Education

B.Eng in Software Engineering (3.9/4.0 GPA) | McMaster University | Hamilton, ON Class of 2023

- **Awards:** McCall Macbain International Scholarship (\$24,000), Honors Entrance Scholarship (\$2000), Dean's Honor List.
- **Notable Courses:** Data Structures and Algorithms, Concurrency, Databases, Discrete Math, Calculus, Linear Algebra.
- **Research Assistant:** UI components and image processing algorithms in C++ for video annotation software.
- **Teaching Assistant:** 1DM3 Intro to Discrete Math (Sets, Relations, Graphs, Trees, Counting, Probability, Logic, Proofs).
- **Teaching Assistant:** 1Z03 AI Technologies (History, goals, and impact of AI, taught by Rhodes Scholar Matthew Jordan).