Yash Matharu

📞 (289)-788-9214 ✉ matharuy@mcmaster.ca 🏠 yashmatharu.com ⬛ yashm07 Ⓜ yashmatharu in yashmatharu

EDUCATION

McMaster University   Sept 2020 – Expected 2025
B.Eng Electrical and Biomedical Engineering (Co-op) — GPA 4.0   *Hamilton, ON*

Awards Dean's Excellence Scholarship ($7,500), TC Energy Community Leaders Scholarship ($2,500)
Relevant Courses Data Structures and Algorithms, Principles of Programming, Circuits and Systems

SKILLS

Languages Python, C, C++, Javascript, HTML/CSS, MATLAB
Machine Learning PyTorch, Tensorflow, Keras, ONNX, WandB, Numpy, Pandas, Scikit-learn, Seaborn, Matplotlib
Web Development React.js, Node.js/Express.js, MongoDB, Firebase, Bootstrap
Tools Git, Trello, Jupyter, Google Colab, Figma, Sketch

EXPERIENCE

Machine Learning Engineer Intern   Mar 2022 – Present
Michael G. DeGroote Institute for Infectious Disease Research   *Hamilton, ON*

- Prepared dataset consisting of 130+ million data points by extracting data from public databases and performing data preprocessing, enabling researchers to expedite training process **(Python, Numpy, Pandas, Matplotlib)**
- Achieved an average F1-score of 0.82 across all classes for small molecular activity prediction by fine-tuning classification heads on top of large language models (BERT, RoBERTa) for multi-task learning **(PyTorch, ONNX)**
- Implemented transfer learning by sharing weights from previously trained models to a new multi-task problem, increasing model accuracy by 16% for natural product classification

Machine Learning Research Assistant   May 2021 – Aug 2021
McMaster University   *Hamilton, ON*

- Utilized object detection and image segmentation algorithms to accurately detect pathogenic cysts in real-time for water filtration in remote communities **(Python, OpenCV, Numpy)**
- Improved performance of a model with limited data by 35% by training various large image classification models
- Developed deep convolutional neural networks for a multi-class classification task **(Tensorflow, Keras)**

Product Manager — 🔗 ⬡   Dec 2020 – Feb 2021
McMaster University - DSC   *Hamilton, ON*

- Awarded 1st place out of 15 teams in an incubator program by leading a team of developers, business analysts, and designers to create a vaccination tracking mobile application **(Trello, React Native, Firebase)**
- Conducted 15+ user interviews, consumer research, and created user personas to define problems in healthcare
- Defined product vision, features, and roadmap to successfully build a minimum viable product

PROJECTS

HealthCheck, MacHacks 2 — 🔗 ⬡   Jan 2022

- Applied natural language processing to diagnose mental illnesses by fine-tuning a pre-trained BERT multi-class text classification model, achieving an 80% test accuracy **(Python, Tensorflow, Keras, Pandas)**
- Won the best healthcare hack award out of 38 teams at one of Canada's largest AI hackathons

YelpCamp — 🔗 ⬡   Jul 2020

- Built a RESTful full stack application, a one-stop platform where users can view crowdsourced reviews for campgrounds nearby, post their own reviews, and comment on reviews **(Javascript, Express.js, MongoDB)**

Kaggle Competitions — ⬡   Sept 2021

- Finished top 4% in various Kaggle competitions using data science tools **(Python, Scikit-learn, Matplotlib)**

EXTRACURRICULARS

Program Representative   Sept 2020 – Present
McMaster University - Faculty of Engineering   *Hamilton, ON*

- Engages with students and families at school events to encourage students to pursue careers in engineering
- Speaks at recruitment events and panels to 400+ prospective students about McMaster Engineering