

Brendan Marks

SOFTWARE ENGINEERING · MCGILL UNIVERSITY

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Skills

Programming Languages Python, Java, C++, JavaScript, SQL, HTML, CSS, TypeScript, C
Tools and Frameworks Pandas, Scikit-Learn, Flask, Spring, FastAPI, React, Angular, Git, PyTorch, Cuda

Work Experience

Royal Bank of Canada, GAM

Toronto, Canada

QUANTITATIVE DEVELOPER CO-OP

Jan. 2021 - Aug. 2021

- Responsible for end-to-end development of a financial report distribution system utilizing Python Notebooks, a FastAPI backend, Node.js microservice and Angular frontend that was deployed for 3+ investment management teams and presented to upper management
- Improved service performance by 80% through implementation of ETL pipeline and Redis cache
- Enhanced system reliability and security through integration of loadbalancer and stateless authentication using NginX and OAuth2.0
- Worked directly with investment teams to gather requirements, analyze feedback, and provide solutions to improve existing products and workflows

Matrox

Dorval, Canada

SOFTWARE DEVELOPMENT INTERN

May. 2020 - Aug. 2020

- Developed testing algorithms in object-oriented C++ for an image processing library, increasing product reliability by adding 10+ tests
- Wrote documentation for 4 shape-detection algorithms of 2D images, leading to the creation of a visual debugging tool to aid developers more easily understand algorithms

Ormucó

Montreal, Canada

SOFTWARE DEVELOPMENT INTERN

Jan. 2019 - Feb. 2020

- Performed fullstack development of a web application using AngularJS, MySQL, Python, and HTML & CSS in a Linux environment by resolving weekly bugs and adding 5 features to improve user experience and product functionality
- Worked closely with the CEO to implement a virtual machine backup and restoration feature for the company, greatly improving safety of customer data

Extracurricular Activity

Visual Product Search

Montreal, Canada

MCGILL UNIVERSITY

Sept. 2021 - Present

- Created a ReactNative mobile application and Flask backend, and trained corresponding Convolutional Neural Network with PyTorch to identify products based on user-uploaded photographs, allowing for product specific shopping workflows to be offered in a convenience store
- Fine-tuned the pretrained ResNet50 model, leveraging image augmentation, to achieve over 95% accuracy in categorizing products
- Converted model to Tensorflow.js and quantized it to enable deployment on a mobile device, reducing prediction overhead by 97%

COVID QC (covidqc.com)

Montreal, Canada

MCGILL UNIVERSITY

Mar. 2020 - April. 2020

- Developed an interactive COVID-19 dashboard using ReactJS to show most recent data and statistical insights for Montreal neighbourhoods and the province of Quebec
- Collaborated with 15+ members including interfaculty undergraduates, graduate students, and university professors to add new user functionality such as Tableau and BI components

DPM

Montreal, Canada

MCGILL UNIVERSITY

Sept. 2019 - Dec. 2019

- Designed and programmed a semi-autonomous robot in Java using the LeJOS EV3 API
- Added algorithms and logic using sensors to follow walls, localize and navigate a grid area
- Implemented multi-threading to maximize efficiency on a low-power processor

Education

McGill University

Montreal, Canada

SOFTWARE ENGINEERING (BENG)

Sept. 2018 - May. 2022

- 3.90 / 4.00 CGPA
- Edgar R. Parkins & Faculty of Engineering scholarships for outstanding academics
- Dean's Honour List
- Courses in Machine Learning, Software Engineering, Data Structures, Probabilities & Statistics, NLP, AI and Model-Driven Development