+1 (418) 580-8622
Montreal (Canada)
mathieu.dufour3@mail.mcgill.ca
https://www.linkedin.com/in/mathieu-dufour-swe/
https://github.com/mathieu-dufour
https://devpost.com/mathieu-dufour/

For an interactive and up-to-date version of this resume, please visit mathieudufour.dev

MATHIEU DUFOUR

EDUCATION

McGill University — GPA: 3.49/4.00

Montreal (Canada), September 2018 – Present (Expected December 2021)

Software Engineering Major (B.Sc.)

Relevant coursework: Applied Machine Learning, Software Design, Software Delivery, Algorithms and Data Structures, Software Engineering Project

Minor in Entrepreneurship (Desautels Faculty of Management)

Relevant coursework: Technological Entrepreneurship

Semester Abroad: Nanyang Technological University — GPA: 4.50/5.00

Singapore, January – May 2020

2nd best university in the world for Computer Science (U.S. News and World Report, 2020)

Computer Science (School of Computer Science and Engineering)

Relevant coursework: Artificial Intelligence, Database Systems, Operating Systems

SKILLS

Spoken & Written Languages

French (native), English (fluent) & Spanish (beginner)

Programming Languages

Experienced: Java, JavaScript, Typescript, HTML, CSS

Proficient: Python, Go, C, C#, OCaml, Dart (using Flutter SDK)

Other Technologies / Frameworks

Git, MySQL, Docker, Bash, PowerShell, Angular, Flutter, PyTorch, TensorFlow

INTERNSHIP

Programmer Analyst Trainee — CGI Inc.

Quebec City, May–August 2019

- Office 365 Migration Software: Computer software to automatically migrate the mailboxes of any company from on-premises Exchange servers to Microsoft Office 365 online servers. I wrote the entire program, together with another intern, using Windows PowerShell (back end), C# (front end) and the Microsoft .NET Framework
- I held a workshop in front of other employees to explain the logic behind the Office 365 Migration Software code and the most advanced programming concepts used.
- PowerShell scripts to execute different tasks for several companies, such as SNC Lavalin, Total, CSL and MRC Vaudreuil-Soulanges

PERSONAL PROJECTS

Full Stack Personal Project: Social Media-Based Travel Planner

May 2020–Present (work in progress)

- Technology used: Angular (TypeScript, HTML, CSS), Go, MySQL
- APIs: Google Maps, Google Sign-In, Facebook Login
- An early version can be found at https://tritzi.herokuapp.com/ (work in progress; suggested credentials for testing: {username: “test”, password: “test123”})

Currently Developing an App for a Startup

March 2020–Present

I am developing a mobile app (Android & IOS) using the Flutter SDK for a startup called "Entre Copines." Users will receive stylist services through the app, which will also include a social media platform. I am using Google Firebase for the app's database. I will also develop an administration web page for the stylists.

HACKATHONS

Winner of the McGill Physics Hackathon (People's Choice Award)

7–8 November 2020

- Non-Newtonian and Newtonian web-based fluid simulator
- Using p5.js along with Vue.js and Chart.js
- Devpost: https://devpost.com/software/ez-fluid-simulator?fbclid=IwAR1HMbahgsVTjS7yn2gGHK97oD0mfi1pQFYM4towNKkQl0KxCHRPuMdHJc8
- GitHub repository: https://github.com/mathieu-dufour/physics-hackathon

Participation in Hack&Roll 2020 (Hackathon organized by the National University of Singapore)

18–19 January 2020

Development of a mobile app (Android & IOS) that helps students to apply for jobs on their university campus. The app has been written in Dart, using the Flutter SDK, and is connected to Google Firebase.

Participation in McHacks 6

2–3 February 2019

Development of a study manager Android app for students. The app blocks access to the phone during study hours and notifies the user when it is time to take a break. Written in Java and XML.

SCHOOL PROJECTS

One-Year Long Software Engineering Project: Development of a Distributed Multiplayer Game

September 2020-April 2021

- Following a model-driven engineering approach
- Exploration of the software development life cycle: requirements elicitation and specification, architecture design and detailed design, implementation, deployment, and maintenance.
- Technologies: C# (back-end), Unity (front-end) and Azure Virtual Machine (server)

Convolution Neural Network for Multi-Label Classification of Image Data

December 2020

- Classification of images containing 1 to 5 handwritten digits
- Top 5 out of 247 competitors (private Kaggle Competition)
- Test accuracy of 99.821% on unseen dataset of 14,000 images
- Use of both TensorFlow and PyTorch

Prediction of the Number of COVID-19 Hospitalization Cases Based on Symptom Search Trends

October 2020

- Comparison of the prediction accuracy of K-nearest neighbours (KNN) and decision trees
- Using publicly available datasets provided by Google Research
- Visualization of data using Principal Component Analysis
- k-means clustering to find groups in the search trends dataset (unsupervised learning)

Implementation from Scratch of Multi-Class Logistic Regression (SoftMax Regression)

November 2020

- Only using general Python utilities from SciPy (NumPy, pandas, Matplotlib)
- Implementation of a gradient descent mini-batch optimizer

Implementation of a GitHub Actions Release Pipeline for an Open-Source Software

November-December 2020

- Golang-based OSS (https://github.com/denverquane/automuteus)
- GitHub Actions implemented: automated testing, unit test coverage, build trigger on push and code linting (GolangCI) added to workflow

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OTHER

Publication of a Book on How the Universe Works

January–May 2018

I wrote, using LaTeX, a 40 pages scientific essay that explains how the Universe works, from the Big Bang to the theories about how it will end. The essay has been officially published at the library of the Cégep de Sainte-Foy.

Design of a Scientific Website

September–March 2016

Design, using Jimdo, of a scientific website where I answered numerous scientific questions, as part of the final personal project of the International Baccalaureate.

https://sciensationnelle.jimdo.com/

Participation in the Provincial AQJM Final

May 2010

I got 100% at the 2010 provincial final of the Association Québécoise des Jeux Mathématiques.

Online Courses Taken

- IOS & Android Mobile App Development Using Flutter & Dart (Udemy)
- Mobile development with Android Studio (Udemy) – Java (back end) and XML (front end)
- Introduction to Computer Science with Python (Udacity)

REFERENCES AVAILABLE UPON REQUEST