

# Moe Bachrouch

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## SKILLS

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**Languages:** Java, JavaScript, Python, C, C++, SQL, HTML, CSS, Bash

**Frameworks/Libraries:** Spring Boot, React.js (AntDesign, MaterialUI), Node.js, Express.js, jQuery, Bootstrap

**Tools:** Microsoft SQL Server, Git, Apache (Maven, Camel, Kafka), ConcourseCI, MongoDB, JIRA

## EXPERIENCE

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### Software Engineer (Co-op)

January 2021 – April 2021 & September 2021 – Present

*Manulife Financial Corporation*

*Toronto, ON*

- Developed REST APIs and implemented backend services to perform financial calculations using Java Spring Boot and to decommission the Quant database which reduced business costs
- Taught myself React.js to develop frontend features such as tables generated from Excel spreadsheets while interacting with a REST API in the backend which improved UX for quant analysts and portfolio managers
- Built a feature to fetch and validate security cashflows from multiple SQL databases using Spring JPA and JDBC
- Wrote unit tests using Groovy and mocked REST APIs using Postman and Microsoft SQL Server
- Monitored logs for existing Java microservices in Pivotal Cloud Foundry platform and addressed production bugs
- Wrote Flyway and PowerShell scripts and set up ConcourseCI pipelines to support migrations from GitLab to GitHub and SQL Server to Azure SQL which improved the development environment for engineers

### Python Teaching Assistant

September 2021 – Present

*University of Ottawa, Faculty of Engineering*

*Ottawa, ON*

- Presented and hosted weekly laboratory sessions for first year Python students
- Hosted weekly office hours to explain computing concepts in Python for first year students
- Developed assessment solutions and provided feedback for assignments, labs, and exams

### Interoperability Agent and Developer (Co-op)

May 2020 – August 2020

*Employment and Social Development Canada*

*Gatineau, QC*

- Taught myself Spring Boot and Apache frameworks (Camel, Maven, Kafka) to build and maintain REST APIs supporting early COVID-19 government operations
- Initiated skeleton of backend API used in Web services supporting Canada Pension Plan and Old Age Security
- Tested REST/SOAP APIs using Postman and SoapUI before the release of Government services during COVID-19
- Participated in Agile Scrum sprint planning, daily scrum, sprint review, and sprint retrospective meetings

## EDUCATION

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### B.A.Sc. in Software Engineering | CGPA 3.9/4.0, Dean's List

September 2019 – Present

*University of Ottawa*

*Ottawa, ON*

- Relevant courses: Software Design and Architecture, User Interfaces, Databases, Computer Networking

## PROJECTS

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[moebachrouch.com](http://moebachrouch.com) | *HTML, CSS, JavaScript, Bootstrap, jQuery, Formspree, AOS library*

- Designed, developed, and deployed a personal portfolio website with a custom domain
- Implemented a contact form using Formspree and validated the form using JavaScript/jQuery and RegEx
- Embellished the website by adding animations using the animation on-scroll (AOS) library

[RLC Circuit Design](#) | *C, PLplot library*

- Built a C application from the ground-up using the PLplot library
- The program plots a function derived from Kirchhoff's second law based on user input by using an incremental search root-finding method with a total of 100 points

[Menace](#) | *Java*

- Developed a machine-learning Tic-Tac-Toe algorithm for a course project based on a 1961 paper by Donald Michie
- The AI learns how to play automatically against a human via reinforcement learning

## ACHIEVEMENTS

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- Ranked in top 3% among 200 students in a Python course at uOttawa after learning Python for the first time
- Received multiple engineering scholarships for stellar academic performance and community engagement
- Built a personal custom PC with the help of Google, Reddit, pcpartpicker, and user manuals for the parts

# Mohamed Bachrouch

## Courses

Code	Title	Term	Grade	Units
<b>2019, Fall</b>				
ADM1340	FINANCIAL ACCOUNTING		A+	3.00
ECO1104	INTRODUCTION TO MICROECONOMICS		A+	3.00
ENG1112	TECHNICAL REPORT WRITING		A+	3.00
ITI1120	INTRODUCTION TO COMPUTING I		A+	3.00
SEG2900	PROF.COMM.RESP		A+	3.00
CGPA	10			
<b>2020, Winter</b>				
ADM2320	MARKETING		A	3.00
BPS1101	DRUGS 101		A+	3.00
ITI1100	DIGITAL SYSTEMS I		A+	3.00
ITI1121	INTRODUCTION TO COMPUTING II		A+	3.00
MAT1348	DISCRETE MATH FOR COMPUTING		A+	3.00
CGPA	9.9			
<b>2020, Summer</b>				
SEG2901	WORK TERM I		P	3.00
CGPA	9.9			
<b>2020, Fall</b>				
CEG2136	COMPUTER ARCHITECTURE I		A+	3.00
CSI2510	STRUCT DE DONNÉES ET ALGO		A+	3.00
CSI2772	CONCEPTS PROGRAMMATION C++		A+	3.00
MAT2377	PROB. & STATS. FOR ENGINEERS		A+	3.00
SEG2105	INTRO TO SOFTWARE ENGINEERING		A	3.00
CGPA	9.87			
<b>2021, Winter</b>				
SEG3901	WORK TERM II		P	3.00
CGPA	9.87			
<b>2021, Summer</b>				
CEG3585	COMM DONNÉES ET RÉSEAUTAGE		A+	3.00
CSI3131	OPERATING SYSTEMS		A+	3.00
SEG3103	SOFTWARE QUALITY ASSURANCE		A+	3.00
SEG3125	ANAL. & DESIGN USER INTERFACES		A+	3.00
CGPA	9.89			
<b>2021, Fall</b>				
SEG3902	WORK TERM III			3.00
CGPA	9.89			

**2022, Winter**

CSI2101	DISCRETE STRUCTURES	3.00
CSI2132	DATABASES I	3.00
CSI2520	PARADIGMES DE PROGRAMMATION	3.00
SEG2106	SOFTWARE CONSTRUCTION	3.00
SEG2911	SOFTWARE ENGINEERING	3.00
CGPA		

----- End of course list -----

**Legend**

**Grades**

10=A+      9=A      8=A-      7=B+      6=B      5=C+      4=C      3=D+      2=D      1=E      0=F

**Symbols**

()= Credits not granted

ADD= Additional to requirements

CTN= Continuing

DR= Dropped

EIN= Failure/Incomplete

NS= Unsatisfactory

SCO= Insufficient credits

\*= Excluded from average

AUD= Auditrice/auditor

DFR= deferred

H= Honours

NC= No credit

P= Pass

ABS= Absence

CR= Credit

DNW= See: ABS

HP= Out-of-program

NNR= Not available

S= Satisfactory