

# Mohammed Benabbassi

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Aspiring Software Developer and AI/ML enthusiast with a strong background in scientific research and software development. Currently, a student-athlete, I'm keen to integrate my analytical and problem-solving skills into real-world challenges. I am targeting positions that will further enhance my skills and provide me with an avenue to contribute to AI advancement applied to healthcare.

## PUBLICATIONS

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### ON THE ESTIMATION OF LINEAR SOFTMAX PARAMETRIZED PROBABILITY DISTRIBUTIONS

KSC • Dec 2023

## EDUCATION

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### Bachelor of Science - BS in Computer Science (AI)

Université de Sherbrooke • GPA: 4.15/4.3

Profile: intelligent systems (AI/ML and data science) Strong interest for a master's in ML after the bachelor's.

### DEC-BAC in Computer Science

Cégep de Trois-Rivières • GPA: 35 R score

## WORK EXPERIENCE

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**KAIST** • Seoul, South Korea • May 2023 - Oct 2023

### Machine Learning Researcher

- Conducted in-depth research in Reinforcement Learning, specializing in low-rank MDPs, with a focus on improving sample complexity.
- Developed and implemented experiments in a synthetic MDP environment, demonstrating proficiency in experimental design and execution.
- Presented findings through comprehensive paper reviews, contributing to ongoing research and showcasing strong communication skills.

**Intact FC** • Montreal, Canada • Jan 2022 - May 2023

### Data Scientist

- I work with the data science team on adapting a classification model (Catboost) to detect fraudulent claims.
- I extracted 3 years of daily data (~300 million records of car ads), pre-processed it, and loaded it to Snowflake using AirFlow, PySprak, Snowflake, Pandas, and Numpy.
- I built a history of ads per vehicle to enhance the storytelling in the reports.

### Backend AI Engineer

- I worked with the AI engineering team on the backend of the driving application for usage-based insurance.
- I implemented a project, as an ETL, to generate synthetic data from the prod environment and write it to Snowflake in dev environment using synthetic data vault, GANs and Gaussian Copula.
- I contributed and maintained mainly the data pipelines to do transformations and featurizations for the actuarial and datascience teams.

**Université de Sherbrooke** • Jan 2022 - Present

**Undergraduate Teaching Assistant**

- I work as the teaching assistant for undergraduate courses including data structures (C++), database management (PostgreSQL and MongoDB), and object-oriented programming (Java).

**Cellule d'expertise en robotique et Intelligence artificielle** • Trois-Rivières, Canada • Feb 2021 - Aug 2021

**AI Engineer**

- I worked on a chatbot designed for Baseball Quebec using AWS (Lex, Lambda, DynamoDB, S3, Amplify) and machine learning (NLP and fuzzy logic).
- I received a MITACS scholarship in association with the developed project.

**Le Groupe Shift** • Trois-Rivières, Quebec, Canada • Sep 2020 - Mar 2021

**Web Developer**

- I worked on multiple projects according to the clients' needs using the agile approach.
- I contributed principally to backend features for industry 4.0 management applications in C#, ASP.net, and JavaScript.

**C2T3 (Centre collégial de transfert de technologie en télécommunications**

Trois-Rivières, Quebec,  
Canada

**AI Researcher**

- I worked on a project to detect and classify vehicles using pre-trained CNN models (ResNet-18, AlexNet, and GoogLeNet).
- I implemented the project on an Nvidia Jetson Nano to collect data about traffic to automate road lights.

## PROJECTS

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### QSAR Package

A Python package that offers robust predictive modeling using QSAR for evaluating the transfer of environmental contaminants in breast milk. It integrates multiple predictive models, provides synthetic data generation via GANs, and is tailored for researchers and health professionals.

### Rover's Vision Module

I am responsible for the implementation of the vision module of my club's (UdeS Robotics) rover to detect and avoid obstacles using a depth camera (Intel RealSense).

### Inventory Management System

We have ensured inventory management and reservations with software developed in Vb.net and linked it to a MySQL database hosted on a remote server.

### Multiplayer Battleship

I have developed a client-server battleship game and implemented an integrated chat using JavaFX.

### Sudoku generator and solver

I have used multithreading and a backtracking algorithm to maximize performance and error handling.

## CERTIFICATIONS

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### Introduction to Machine Learning

Université du Québec à Trois-Rivières • Jun 2021 - Present

## **CCNA 2: Routing and switching essentials**

Cisco • Mar 2021 - Present

## **CCNA 1: Introduction to networks**

Cisco • May 2019 - Present

## **AWARDS & SCHOLARSHIPS**

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### **Mobility Scholarship for Research in South Korea**

Issued by the University of Sherbrooke • May 2023

### **Talent bursary for the AI week**

Alberta Machine Intelligence Institute • Mar 2022

### **Scholarship for AI summer bootcamp**

École d'intelligence artificielle • Jun 2021

### **Admission Scholarship**

Université de Sherbrooke • May 2021

### **Academic Performance Scholarship for International Students**

Université de Sherbrooke • May 2021

### **Bourse de recherche et innovation MITACS**

MITACS • Feb 2021

### **Full Tuition Scholarship**

Quebec Gouvernement • Apr 2019

### **Eureka Scholarship**

Fédération des cégeps • Sep 2018

### **Medals at Several Provincial and National Swimming Championships**

## **VOLUNTEERING & LEADERSHIP**

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### **Robotique UdeS**

Developer • Mar 2022 - Present

### **Opération Nez rouge**

Fundraising volunteering • Nov 2021 - Dec 2021

### **JDIS**

Organize CS competitions and Hackatons

## **SKILLS**

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AI, Apache Airflow, ASP.NET MVC, AWS, c++, CI/CD, CNN, collaboration, communication, Databricks, Data science, DBMS, DL, Docker, GAN, Git, Java, JavaScript, Kafka, Keras, Kubernetes, Linear Algebra, MDP, ML, NLP, NoSql, Pandas, Probability, Problem-solving, PySpark, Python, PyTorch, RDKit, Research, RL, Scikit-learn, Scrum, Snowflake, SQL, Tensorflow