

# Youssef Barkaoui

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## EDUCATION

### CONCORDIA UNIVERSITY

PHD IN MATHEMATICS

TOPIC : PROBABILITY THEORY AND STOCHASTICS

THESIS : TBD

Sep 2024 - | Montreal ,Canada

### QUEBEC UNIVERSITY

M.SC IN APPLIED MATHEMATICS AND COMPUTER SCIENCE

TOPIC : MACHINE LEARNING AND STATISTICS

THESIS : SELF-PACED DEEP CLUSTERING

Sep 2020 - Jun 2022 | Montreal ,Canada

### AIX-MARSEILLE UNIVERSITY

BS IN MATHEMATICS

THESIS : COCHRAN'S THEOREM & APPLICATIONS

Sep-2018 - Jul 2019 | Marseille ,France

## EXPERIENCE

### GIRO | SOFTWARE ENGINEER : ALGORITHMS OPTIMIZATION & AI

Sep 2022 - Nov 2024

- Customized and extended GIRO's optimization software in C++ for client-specific applications.
- Tuned operations research algorithms to meet unique business constraints.
- Contributed to modeling and developing new features for public transit scheduling, serving 5+ enterprise clients.

### MORGAN STANLEY | TECHNOLOGY ANALYST

May 2021 - Aug 2021

- Debugged Passport Trading Desktop platform for external clients, resolving critical latency issues.
- Deployed an Angular-based web application for trade analytics.

### JACOB.B.AI | MACHINE LEARNING ENGINEER

Jan 2021 - Apr 2021

- Developed a reasoning-based cognitive agent to identify causal factors in COVID-19 from wearable data achieving 92% precision.

### CNRS | AI RESEARCH ENGINEER INTERN

Apr 2020 - Jun 2020

- Developed a deep learning model using PyTorch aiming to discriminate between cosmological dark matter halos.

### THALES | ANALYST-PROGRAMMER

Dec 2019 - Apr 2020

- Designing Real time ship Optimization algorithm helping to fix disruptions in cooperation with the Gerad lab
- Bridging C++ optimization packages to Python Tensorflow for predictive maintenance.

### JPMORGAN CHASE | SOFTWARE ENGINEERING VIRTUAL EXPERIENCE INTERN

Aug 2019

- Interface with a Stock price Data feed and set up your system for Analysis of the Data and its visualization

## ACADEMIC EXPERIENCE

### | RESEARCH AND TEACHING ASSISTANT

Sep 2020 - Apr 2021

- MATH201 : Elementary Functions
- STAT250 : Introduction to Probability and Statistics
- PIF6004 : Special Topics In Computer Science ,In Machine Learning and Computer Vision
- SDD1001 : An Introduction to Data Science
- MAT1919 : Mathematical concepts in cognitive neuroscience

### CERN |SOFTWARE ENGINEER INTERN

Aug 2019

- Developed a visualization framework for high-volume particle collision data at the HL-LHC.
- Collaborated with research physicists to build interactive analysis tools.

### INRIA / BEZOUT LAB | RESEARCH ASSISTANT

Oct 2019 - Dec 2019

- implement GoSGD algorithm for distributed optimization for deep learning

## SKILLS

Proficient:

• Python • SQL • R • C++

Familiar:

• Matlab • Java

## AWARDS

- 2015 National Moroccan Mathematics Olympiad Finalist
- 2017 Regional IcpC Contest finalist team
- 2020 Springer Nature ICCCI Best Paper
- 2020 Mitacs Accelerate Fellow
- 2021 UQ Excellence Scholarship
- 2024 Doctoral Graduate Fellowship