Amine Natik

Age : 24 years old

Interested in: Deep Learning, Machine Learning, Statistics,
Computational Neuroscience and Mathematical Olympiad.

aminenatik96@gmail.com

amine.natik@umontreal.ca

Education

Université de Montréal – Mila   Montréal, Canada

PhD in Applied Mathematics.   *2019 – Present*

Advisors : Guillaume Lajoie & Guy Wolf.
Thesis : Spatial and spectral properties of neural network connectivity
and their impact on learned representations.

University of Ottawa   Ottawa, Canada

M.Sc with thesis in Mathematics.   *2017 – 2019*

Advisor : Aaron Smith.
Thesis : Network analysis: Consistency of the spectral seriation algorithm.

Faculté des Sciences de Rabat   Rabat, Morocco

B.Sc in Mathematics.   *2015 – 2017*

Advisor : Nadia Raissi.
Thesis : Mathematical Models for Cancer Growth.

Lycée Salmane Al Farissi   Salé, Morocco

Classes préparatoires scientifiques MPSI   *2014 – 2015*

Experience and Awards

IVADO PhD Excellence Scholarships — Institut de valorisation des données — Montréal, Canada.
April 2020 → Present.
- A prestigious scholarship given to the best students in Montréal doing research in the field of Data Science.

Teaching Assistant — Université de Montréal
September 2019 → Present
- STT3795 Theoretical foundation of data science.

Montreal Artificial Intelligence & Neuroscience Conference 2019 — Poster — Montréal, Canada
November 14-17 2019.
- Decomposing dynamics of recurrent neural networks using probe networks

Ninth industrial problem solving workshop — Centre de recherche de Montréal
August 19 - 23, 2019.
- Development of a mathematical framework to represent a 2D/3D smooth geometric structure.

Summer School on Random Walks and Complex Networks — Nice, France.
July 8 - 19, 2019.
- Advanced courses in random graphs, random walks and complex networks.

Teaching Assistant — University of Ottawa

September 2017 → July 2019
- STT3795 Theoretical foundation of data science – and MAT1400 Calculus I.

CANDEV Data Challenge — Participant — Ottawa, Canada.

October 2018.
- Implemented algorithms to study correlation between the Northern Lights and the magnetic field.
- Classification of Aurora images using deep learning algorithms.

Mathematics Tutor — eDukaty Center — Casablanca, Morocco.

June 2017 – August 2017
- Math tutor for students in classes préparatoires SUP-SPE.

International Mathematical Olympiad Shortlist — Rio De Janeiro - Brazil.

July 2017
- Proposed problem N2 of IMO 2017 Shortlist: available here
- First Moroccan to propose a problem in Shortlist.

President of Math&Maroc Association — Olympiad coach — Rabat, Morocco.

November 2016 – July 2017
- Coaching the Moroccan olympiad team in Algebra, Number theory, Combinatorics and Geometry.
- Member of National Mathematical Olympiad Team.
- Research on Number theory problems.

International Competiton for University Students — Participant — Blagoevgrad, Bulgaria.

July 2016
- The first Moroccan to participate at IMC.
- Third Prize - Bronze medal.

Académie Hassan II Des Sciences Et Techniques Scholarship — Participant — Rabat, Morocco.

Septembre 2014 → Present.
- A prestigious scholarship given to the top 2 Moroccan students in 'Concours Général des Sciences et Techniques' contest.
- Ranked second between the top 40 Moroccan highschool students in mathematics.

International Mathematical Olympiad — Participant — Cape town, South Africa.

July 2014
- A memeber in the Moroccan team representing Morocco in the IMO 2014.
- One of top 6 students in Morocco who were selected to participate at IMO.
- Honorable mention.

AIMS Math Camp — Participant — Muizenberg, South Africa.

July 2014
- Math camp to prepare for IMO 2014 with more than 15 African countries.

Skills

Programming Languages

Python, C, C++, Java, R, Matlab, LaTeX.

Languages
- French (Bilingual)
- English (Second language)
- Arabic (Native Language)