

Abir HARRASSE

Location: Benguerir, Morocco

Telephone number: +212 688 972327

Education

Engineering degree in industrial management

EMINES-UM6P

Engineering degree program

Sept 2022 - present

Coursework includes: multivariable calculus, Probabilities, Martingale strategies, Statistics, Lebesgue integration, measure theory, linear programming, biomedical engineering, Monte-Carlo method, Robotics, Analytics, Principles of economics

Preparatory classes: Maths- Physics- CS - Robotics

EMINES-UM6P

Preparatory classes program

Sept 2020 - June 2022

Coursework includes: Real Analysis, General Topology, General Algebra, Linear Algebra, Electromagnetism, Electronics, Thermodynamics

Selected Experience

RL with generative models

Jan 2023 - Jan 2024

Research assistant

College of Computing-UM6P

- I worked under the supervision **Prof. Omar Saadi** on model-based reinforcement learning with generative models. My role includes testing existing algorithms and exploring ways to enhance their runtime or sampling complexity..

BCG Platinion Hackathon

October 2023

Winner

BCG Casablanca

- Our mobility solution, which optimizes the matchmaking process between transporters, suppliers, and demanders of goods, secured the top national prize and the second-place in the international round. The hackathon drew participants from 7 major global cities.

Morocco IoT and AI Challenge

September 2023

Finalist

Marrakech

- As a finalist in the Morocco IoT and AI Challenge, I presented an ongoing project called Med-Flamingo. It merges medical visual language models with Large Language Models (LLMs) to develop a medical **chatbot**. This chatbot converses with patients in **Moroccan Dialect**, answering medical questions and creating reports for healthcare professionals. Currently, we are actively working on enhancing the AI safety aspects of our solution. The project is accessible through: medical chatbot

Product Assortment Optimization

June 2023 - July 2023

Intern

Africa Business School - UM6P

- I researched the assortment optimization's problem theoretical and its impact on retailer profitability under the supervision of **Prof. Agnès GORGE**. We explored the assortment problem under substitution and demand uncertainty and designed a new ML heuristic to solve our problem. The research report is accessible through: published report.

NaMO - Preparing for IMO's 61st edition

Jan 2019-March 2020

Participant

Rabat, Morocco

Among the top 30 participants selected for the country's most prestigious mathematical competition, where the best math students gathered to prepare for international contests like IMO..

Projects

Assets flood protection

Mar 2023 - Apr 2023

Project leader

EMINES-UM6P

- Developed exact algorithms to optimize the cost of building walls around a city of assets for small data and meta-heuristic algorithm to tackle the case of large data

Asthma Mathematical Modelisation

Oct 2022 - Dec 2022

Project leader

EMINES-UM6P

- Under the guidance of **Prof. Marcel Filoche**, our biomedical engineering project applied mathematical modeling, employing Navier-Stokes equations to simulate asthma and gain insights into respiratory airflow during attacks. The project is accessible through: results.

Awards

National Moroccan Merit Scholarship FAR

For the first 50 national scores of high school final examinations

UM6P Excellence Scholarship

For outstanding results in entrance examinations

Selected Courses

MIT introduction to deep learning Stanford CS 224N

MIT's introduction to NLP
Stanford's NLP course

Skills

Languages

Beginner: Mandarin. *Fluent:* English. *Bilingual:* French. *Native:* Arabic.

Programming Languages/Tools

Python, SQL, Pytorch, Tensorflow, Transformers, Diffusers, Datasets, Slurm, FICO Xpress

Volunteering

The GenAI Winter School

Oct 2023-Present

Organizer

Taking an active role in the coordination and organization of The **GenAI Winter School**, an upcoming event set to welcome distinguished researchers including **Yann Le Cun**, **Eric Xing**, and other prominent figures in the field.

MathMaroc

Sept 2021-Present

Vice General Secretary

Collaborating with fellow members to organize events, workshops, and outreach programs to engage students and enthusiasts in the exploration and appreciation of mathematics.

President and founder of E-maths

Jan 2021 - June 2021

EMINES-UM6P

A mathematical club inside UM6P university which aims to promote maths culture.

General Secretary and co-founder of Rotaract EMINES

Jan 2022 - June 2022

EMINES-UM6P

A club with a social impact that aims to make students have a positive impact on local communities in need.

Outside Activities

Reading, Writing, Singing, Debating

Contact Information

