Marouane IBN BRAHIM

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EDUCATION

Cornell University — Ithaca, NY
PhD in Operations Research — August 2022 - Present

École polytechnique — Palaiseau, 91120, France
Master of science in one of France's top ranking universities in science and engineering — 2019–Current

- Third year student specializing in Master's level program in Computer Science (Algorithms and Efficiency track).
- Bsc in Computer Science, with minor in Applied Mathematics.
- Relevant coursework includes: *Design and Analysis of Algorithms, Advanced Algorithmic, Operations Research, Optimization and Control, Computers' Architecture and Operating Systems, Statistics*
  GPA: 3.86/4.0

Lycée Omar IBN AL-KHATTAB, Preparatory program — Meknès, Morocco
A two-year intensive program in mathematics and physics to prepare for nationwide entrance examinations.
Undergraduate coursework includes: *Topology, Algebra, Analysis.*
GPA: 4.3/4.3 — 2017–2019

PROJECT WORK

Theory of Pemutation-based Evolutionary Algorithms — 2021-Current
Advisor: Benjamin Doerr
Analyzing the behaviour and expected complexity of Evolutionary algorithms on the optimization of permutation functions.

Next Product to Buy, Ecole polytechnique, Carrefour — 2020-Current
Advisors: François Yvon, Sylvain Le Corff
Worked with Carrefour, a French multinational corporation on Machine Learning algorithms on their consumers' data (58 Million rows).

Nash Equilibrium in a Discrete Colonel Blotto Game, Ecole polytechnique — 2020-Current
Advisor: Patrick Loiseau
Implemented naïve and refined solutions to compute Nash equilibriums in a Discrete Colonel Blotto Game.

An overview of compartmental models of mathematical epidemiology, SCEI — 2018-2019
Implemented a Python model based on compartmental model in mathematical epidemiology.
Applied the model to the Ebola outbreak in Sierra Leone (2014-2016).

WORK/INTERNSHIP EXPERIENCE

Cornell Tech, Research Internship — New York, NY
Introduced and studied a new class of assortment optimization objective functions — 2022

Electricite de France, Software Engineering and Data Science intern — La Défense, France
Second year internship at the Data Analytics for Production, at EDF.
Developed a data science approach based on a causality use case to determine the causes for mechanical failure in some nuclear sites. — 2021

Head of Business Development at XProjets Palaiseau, France
Put in place and executed the business strategy of the Junior-Entreprise. 2019–Current

Leadership training, Albert Einstein high school, Sainte-Geneviève-des-Bois, France
Part of Ecole polytechnique's curriculum.
Teaching assistant in mathematics, physics, Computer Science and chemistry,
to help students from disadvantaged areas reach high level studies. October 2019 - April 2020

SKILLS

- **Languages:** English (TOEFL iBT 111/120), French and Arabic (Native), Spanish (Elementary)
- **Programming:** Python, C, C++, Java, SQL, Prior Experience with HTML, CSS and Javascript

AWARDS

- – OCP Foundation scholarship 2019–2022
  – Morocco's Ministry of Education Scholarship 2017–2019
  – Morocco's Ministry of Education's medal of honor for admission at Ecole polytechnique 2019
  – Morocco's Ministry of Education's medal of honor for ranking 4th at CCINP 2019
  – Top 1% in the CNC, the national exam of the preparatory program (25/2485) 2019

OUTSIDE ACTIVITIES

- X-Maroc, President 2020–2021
  A student association gathering moroccan students at Ecole polytechnique
- Math&Maroc, Vice treasurer 2019–Current
  An association which aims at promoting sciences in Morocco and organizing training programs for International Olympiads of Mathematics
- Guitar: Classic and electric, 12 years.