

Ahmad Rammal

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EDUCATION

MVA (Mathématiques, Vision, Apprentissage) - Master 2

2023 – 2024

Highly competitive renowned program in the field of mathematical modelling and machine learning

Relevant Coursework:

- Introduction to AGI Safety
- Theoretical foundations of Deep Learning
- Advanced learning for text and graph data
- Foundations of Distributed and Large Scale Computing Optimization

ECOLE POLYTECHNIQUE - Ingénieur Polytechnicien

2020 – 2023

High Distinction, GPA: 3.91/4

- Merit scholarship for my 3rd -year academic performance (**Year GPA: 3.96/4**)
- Specialization in Applied Mathematics

SAINT JOSEPH UNIVERSITY - French preparatory classes MP*

2018 – 2020

Ranked among top 1% in the faculty of engineering.

RESEARCH EXPERIENCE

King Abdullah University of Science and Technology

Researcher in the group of Peter Richtárik

Nominated by Ecole Polytechnique for the best internship award.

Thuwal, Saudi Arabia

April 2023 – October 2023

Contributed to two research papers for AISTATS 2024:

- *Communication Compression for Byzantine Robust Learning*:
 - Led the research effort as the primary author.
 - Paper available on arXiv: [arXiv:2310.09804](https://arxiv.org/abs/2310.09804)
- *Correlated Quantization for Faster Non-convex Distributed Optimization*:
 - Anticipated publication soon.

Surf-Metrics

Research Intern

Paris, France

June 2022 – September 2022

- Research on the state of the art in the area of sentiment analysis.
- Designed a semi-supervised NLP model based on the theory of orthonormal spaces.
Created a pipeline from scratch to scrape and analyse data in order to evaluate companies on Twitter.

SAINT JOSEPH UNIVERSITY

Teaching assistant in Mathematics

Beirut, Lebanon

September 2020 – January 2021

- Prepared students for Ecole Polytechnique's entrance exam.
- Taught classes, prepared supervised homework, corrected students' papers, and graded oral exams.

SIDE PROJECTS

Gram-Schmidt Model

June 2022 – September 2022

A semi-supervised approach applied on binary classification based on the theory of orthonormal spaces.

SCAFFOLD algorithm extension

September 2022 – December 2022

- Integrating Byzantine-robustness to SCAFFOLD (Karimireddy et al.) using variance reduction.
- Studying and visualizing the bounded gradient assumption.

Image Classification and Segmentation

October 2022 – November 2022

Second prize winner in McKinsey's Quantum Black Hackathon at Ecole polytechnique.

Forest Cover Type Prediction

October 2021 – January 2022

Using machine learning techniques to classify forest cover types based on a set of features.

SKILLS AND HOBBIES

- **Programming** – Python, Java, Pytorch, Scikit-Learn, Flask, GitHub
- **Languages** - English fluent, French fluent, Arabic native, German beginner.
- **Hobbies** – Calisthenics, guitar, cycling, meditation, reading.

EXTRACURRICULAR

Institut Polytechnique de Paris Students' Council

Palaiseau, France

Off-Campus Event Officer

October 2023 – Present

- Organizing off-campus events to enhance student engagement and community building.
- Collaborating with external partners and local businesses to secure sponsorships for events.

French Foreign Legion

Castelnaudary, France

Military Participant

January 2023 – February 2023

- Physical, military, and leadership training.
- Field experience within the 4th foreign regiment

XPROJETS - The junior enterprise of Ecole Polytechnique.

Palaiseau, France

Vice President

October 2021 – December 2022

- Built XProjets' global strategy in collaboration with each member of the enterprise.
- Organizing "Congrès Régional du Printemps 2022" in collaboration with four junior enterprises.
- Negotiating with the school's administration to obtain the national student entrepreneur status for the members of XProjets.

Project Manager

April 2021 – December 2022

- In charge of managing clients, recruiting qualified students to carry out assignments, and establishing the enterprise's proposal.
- Signed two missions of a strategic and digital nature

X-LIBAN - The association of Lebanese students at Ecole Polytechnique

Palaiseau, France

President

November 2021 – March 2023

- Managing the relation with the school's administration, the alumni association and the Lebanese associations in other schools.
- Raised a fundraising for the Lebanese students after Lebanon's financial crisis.
- Organized Lebanese themed events for Ecole polytechnique's students.
- Expanded the association size by including the Masters and Bachelors of the school.

Model United Nations (MUN) club

Palaiseau, France

Club Member

September 2021 – February 2022

- Weekly debating, public speaking training (2h/week), and study of international affairs
- Represented Ecole polytechnique at URJCMun 2022 Madrid conference