

# Ahmad Rammal

<https://rammalahmad.github.io> – [ahmad.rammal.2020@polytechnique.org](mailto:ahmad.rammal.2020@polytechnique.org)

## 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*:
  - Paper available on arXiv: [arXiv:2401.05518](https://arxiv.org/abs/2401.05518)

**Surf-Metrics**

Research Intern

- 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.

Paris, France

June 2022 – September 2022

**SAINT JOSEPH UNIVERSITY**

Teaching assistant in Mathematics

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

Beirut, Lebanon

September 2020 – January 2021

## SIDE PROJECTS

**SCAFFOLD algorithm extension**

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

September 2022 – December 2022

**Gram-Schmidt Model**

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

June 2022 – September 2022

**Image Classification and Segmentation**

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

October 2022 – November 2022

## SKILLS AND HOBBIES

- **Programming** – Python, Java, SQL, Pytorch, Scikit-Learn, Flask, GitHub
- **Languages** - English fluent, French fluent, Arabic native, German beginner.
- **Extracurricular** – Board member of the students' council at Institut Polytechnique de Paris.
- **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