

Ahmad Rammal

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EDUCATION

MVA (Mathématiques, Vision, Apprentissage) - Master 2 2023 – 2024
Highest Honors, GPA: 4/4

- *Highly* competitive renowned program in the field of mathematical modelling and machine learning
- Relevant Coursework: Reinforcement Learning, Advanced learning for text and graph data, AGI Safety, Distributed and Large Scale Computing Optimization, Deep Learning in practice.

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

JPMorgan Chase & co Paris, France
AI Researcher April 2024 – October 2024

- Research on Mathematical Reasoning in LLMs:
 - Received outstanding paper award at NeurIPS 2024 Workshop MATH-AI (top 4%). Available on arXiv:2410.16973.
 - Evaluated the impact of synthetic data on improving mathematical problem-solving abilities.
 - Enhanced LLM architecture for better performance in math tasks.

King Abdullah University of Science and Technology Thuwal, Saudi Arabia
Researcher in the group of Peter Richtárik April 2023 – October 2023

Nominated by Ecole Polytechnique for the best internship award.

Contributed to two research papers:

- *Communication Compression for Byzantine Robust Learning*:
 - Paper accepted at AISTATS 2024 and available on arXiv: arXiv:2310.09804
 - Led the research effort as first author.
- *Correlated Quantization for Faster Non-convex Distributed Optimization*:
 - Selected for oral presentation at UAI 2025 and available on arXiv: arXiv:2401.05518

Surf-Metrics Paris, France
Research Intern 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 Beirut, Lebanon
Teaching assistant in Mathematics September 2020 – January 2021

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

PROJECTS & OPEN-SOURCE CONTRIBUTIONS

Pruned GPT February 2025
Designed a compact GPT-2 model between GPT-2 Small and Medium by implementing NVIDIA's pruning and knowledge distillation approach in arXiv:2407.14679

Gram-Schmidt Model June 2022 – September 2022
A semi-supervised approach applied on binary classification based on the theory of orthonormal spaces.

SKILLS AND HOBBIES

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