Dhia Garbaya

garbayad2@gmail.com

dhia680.github.io | github.com/dhia680

Profile

Open to research opportunities starting in Fall 2026 (FR, CH, UK).

Experience

AI scientist intern || Mistral AI Apr'26 - •

- Teams: `Formal reasoning`
- MS thesis topic: RL for long horizon tasks (Lean, Code agents)
- Contributing to upcoming theorem-proving and general-purpose agentic models
- Supervisor & Tutor: Albert Jiang & Michal Valko

Visiting student || EPFL Feb'25 - Jan'26

- Teams: `MLO` lab & `Swiss AI Initiative`
- Supervisor: Prof. Martin Jaggi
- Focus: pre-training Transformers (4k GPUs), distillation, overthinking, RLVR

Research intern || TII (UAE) Jul'24 – Jan'25

- Teams: `AI theory` & `Falcon pre-training`
- Supervisor: Dr. MEA Seddik
- Focus: distillation, pre-training (5k GPUs), scalable optimization algos, param-free learning

Education

École Normale Supérieure (P-S), MVA: M2 research [Math, Vision, Learning] 2025 – 2026

- **Coursework:** Convex optimization · Reinforcement learning · Optimal transport · Generative modelling for images · Bayesian ML · Geometric DL · Graphs in ML · LLMs for code and proof · Robotics...

École des Ponts et Chaussées (IP Paris), MEng [Applied Math, ML] 2022 – 2025

- **Coursework:** Machine learning (JAX) · Deep learning (torch) · Optimization · Operations research (Julia) · Advanced algorithmics (C++) · Vision · Stochastic processes · Statistical physics · PDEs · Game theory...

Esprit Prépa, Tunis, Prépa [Math, Physics] 2020 – 2022

- **Coursework:** Algebra/ Topology/ Analysis/ Probability/ Theoretical Physics/ Algorithms...

Publications

Terminator† : Learning Optimal Early Stopping in CoT Reasoning · **ICLR & ICML'26** Website · Openreview
UT Austin & EPFL & ENS Paris-Saclay & Télécom Paris - 2026

FOG Architectures* : Toward Pure FP8 LLM Training at Scale · **NeurIPS'25** arXiv · Openreview
EPFL & ETH Zurich - 2025

Apertus* : Democratizing Open, Compliant, and Multilingual LLMs · **ACL'26** arXiv
Swiss AI team - 2025

Falcon3 family of Open Models* : Showcasing transfer learning efficiency Blogpost
Falcon LLM team - 2024

* Joint first-authorship
† Workshop paper

Coding skills

Languages: Python, C++, Julia, R

Tools, frameworks: Pytorch, JAX, Megatron-LM, vLLM, HF, GIT, AWS, Slurm, Run:ai

Some academic projects

Solving PDEs with PINNs [dhia680/pinns-24]

- Studied Physics-Informed-Neural-Networks for solving Helmholtz PDEs [w/ Airbus].

Operations Research

- Optimizing an offshore wind electrical network for RTE, FR

Deep RL for optimizing traffic using autonomous vehicles [.../HighwayEnv]

- Inspired from CIRCLES project. Studied phantom traffic jam and drivers behaviour.

RL for push recovery of a wheeled robot

- PPO, Reward shaping, curriculum, inductive bias · [Robotics (Willow, Inria)]

Posterior Estimation and Importance Sampling [dhia680/NPE-IS]

- Studying neural PE and IS for gravitational waves · [Bayesian ML (Mines Paris)]

Distinctions

- **French government excellence scholarship**: Among 7 national holders of this scholarship, 2022-2026
- **Valedictorian** in both high school and Prépa
- **Large research grant**: funded by the Swiss AI Initiative - led by professors D. Alistarh, M. Jaggi, T. Hoefler.

Languages

- **Arabic** (Native) · **English** (Fluent) · **French**: (Fluent) · **German**: (Intermediate)

Volunteering

- **Reviewer** at ICLR'26, MenaML'25.