

Ruben IFRAH

M.Sc. Student in AI (IASD) – École Polytechnique & Dauphine-PSL

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Education

Dauphine - PSL 2025 – Present
M2 IASD (AI, Systems, Data) Paris, France

- Highly selective research-oriented Master's program
- Directed by Olivier Cappé & Francis Bach
- co-accredited ENS-Ulm & Mines Paris

École Polytechnique 2021 – 2025
Ingénieur Polytechnicien diploma Palaiseau, France

- Majored in Applied Maths and Statistics
- Economy minor: econometrics, financial models, micro/macro economy
- Strong scientific background: general physics, quantum physics, fluid mechanics, solid mechanics, econo-physics
- GPA: 3.7/4.0

Lycée Saint-Louis 2019 – 2021
*CPGE PCSI-PSI** Paris, France

- A two-year intensive program in physics, mathematics and engineering sciences
- Top of the 2020-2021 PSI* class

Experience

Clevaligner June 2025 – Aug. 2025
Data Scientist Intern Paris, France

- Worked in a startup on AI applied to the medical field (dental correction).
- Responsible for assessing and implementing SOTA models in point-cloud teeth segmentation (Transformer-based PointNet).
- Assisted AI engineers in designing and constructing point-cloud pipelines.

University of Valencia April 2024 – July 2024
Research Assistant (Statistics) Valencia, Spain

- Worked on ecological inference estimators and statistical modeling.
- Developed an extended model using different norms for estimator efficiency.

MBDA May 2023 – Aug. 2023
Applied Research Intern Plessis-Robinson, France

- Conducted applied research to optimize anti-jamming filters on stochastic signals.
- Developed advanced stochastic models and simulations using MATLAB.
- Collaborated with defense industry experts on signal processing challenges.

French Army (Saint-Cyr) Sept. 2021 – April 2022
Officer Cadet / Platoon Leader Martinique & Coëtquidan

- **Platoon Leader (Jan 2022 - April 2022):** Led a platoon of 30 new recruits soldiers in Martinique. Organized training exercises and managed logistics.
- **Military Academy (Sept 2021 - Jan 2022):** Intensive officer training at Saint-Cyr Coëtquidan. Developed leadership, rigor, and team management skills.

Objective

I am an **Ingénieur Polytechnicien** (X21) currently pursuing the **M2 IASD** (AI, Systems, Data) at Dauphine-PSL. With a pluridisciplinary background in Physics / Economics and **Applied Mathematics**, I am looking forward for opportunities in Machine Learning, with a strong interest on Deep-RL and Computer Vision.

Projects

Deep RL Autonomous Racing Agent [GitHub](#)

- Developed an autonomous F1 racing agent using PPO, DQN, and Dueling DDQN algorithms.
- Built a custom Gym environment with LIDAR perception and procedural track generation (Harmonic Noise).

Spotify Recommender System [GitHub](#)

- Developed a personal music recommendation pipeline using based on my own Spotify playlists

Scraping & construction of a lyrics dataset [GitHub](#)

- built a high-quality, enriched dataset of popular music over the years based on the Billboard Year-End charts

Skills

Languages & Tools

- Python: Pytorch, Gymnasium, Hugging Face, APIs
- MATLAB, Java, R
- Git, Docker, LaTeX

Maths Expertise

- Stochastic models: Markov Processes, Time series
- Optimization: convex and non-convex
- Numerical Analysis, ODEs

Languages: French(Native), English(C1), Spanish(B1)

Coursework

AI & Theory

- Foundations of Machine Learning ([F. Bach](#))
- Reinforcement Learning ([O. Cappé](#))
- Computer Vision ([T. Walter](#))
- Large Language Models ([A. Allauzen](#))
- Optimization for Machine Learning ([C. Royer](#))

Probability & Statistics

- Markov Processes
- Times series
- Probability theory and Stochastic Processes

Databases & Coding

- DataBases Management Systems
- Data acquisition
- Python for ML

Other science courses

- **Physics:** Quantum Physics, General Physics, Electromagnetism
- **Mechanics:** Fluid Mechanics, Solid Mechanics
- **Economy:** Econo-Physics, Econometrics, Micro/Macro-economy