*Last updated in November 2024*

# Marc Boëlle

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marcboelle marcboelle

## Education

**Master MVA (Mathematics, Vision, Learning)** Sept 2024 – Present
ENS Paris-Saclay

- First semester courses: Object Recognition and Computer Vision, Probabilistic Graphical Models and Deep Generative Models, Advanced Learning for Text and Graph Data, Optimal Transport, Machine Learning for Time Series, Geometric Data Analysis, Reinforcement Learning.

**Cycle Ingénieur, Applied Mathematics (Master of Science)** Sept 2021 – July 2025
Ecole Polytechnique, Palaiseau

- Main courses: Deep Learning in Computer Vision, Algorithm Design and Analysis, Operations Research, Optimization and Control, Statistics, Random Processes, Algorithms for Data Analysis in C++.
- Projects: image classification challenge on a weakly-supervised dataset, and study of papers with code reimplementation (fairness with Wasserstein barycenters, accelerated gossip using Jacobi Polynomials).
- GPA : 3.91/4.0 , ranked 23/443 on graduation.

**Classe préparatoire, Mathematics and Physics (Bachelor of Science)** Sept 2019 - July 2021
Lycée Louis Le Grand, Paris

- Two-year high-level scientific program to prepare for the competitive entrance exams to top French engineering schools. GPA : 4.0/4.0.

## Work Experience

**Research Affiliate** Berkeley, United States
*Grid Integration Group, Lawrence Berkeley National Laboratory* March 2024 - August 2024

- Worked on modeling and optimizing nationwide long-term energy storage in the US, using optimal power flow and several operations research techniques in optimization.
- Integrated accurate cross-state transmission constraints and estimated long-term storage opportunity costs and optimal capacities for each state.
- Paper to be submitted in the upcoming months.

**Research Intern** Neuchâtel, Switzerland
*Digital Energy Solutions, CSEM* June 2023 – August 2023

- Worked on improving the accuracy of solar energy production forecasts by leveraging cloud cover data, using Recurrent Convolutional Neural Networks (RCNNs) and Graphical Neural Networks (GNNs).
- Implemented and trained a RCNN to predict cloud positions from satellite image data.
- Integrated this cloud cover feature extractor into a wider GNN, and trained the GNN to predict photovoltaic energy production in Switzerland.

## Skills

**Languages:** French (native), English (proficient), German (working knowledge), Arabic (beginner)

**Programming languages:** Python, Java, C++.

**Frameworks & Libraries:** PyTorch, Git, LaTeX

## Hobbies

Piano : 12 years at the music academy,
Handball : member of the school team – Badminton : regional level competitions for 10 years