Marc BOËLLE

École Polytechnique
Master MVA

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PROFILE

MVA (Mathematics, Vision, Learning) master's student at ENS Paris-Saclay. Looking for a research internship starting in April 2024.

SKILLS

Expertise Areas: Machine Learning, Deep Learning, Data Analysis
Programming Languages: Python, Java, C++
Frameworks & Libraries: PyTorch, TensorFlow, LaTeX
Soft Skills: Project Management, Team Leadership

LANGUAGES

French (native)

English (proficient)

German (working knowledge)

Arabic (beginner)

HOBBIES

Piano: 12 years of lessons at the music academy, certificate of completion.

Handball: Member of the school team.

Badminton: Competed at the regional level for 10 years.

STUDIES

- **Master MVA -** *ENS Paris-Saclay,* September 2024 – March 2025

  Master's specializing in advanced techniques in machine learning, computer vision, and statistical analysis. Courses including object recognition, probabilistic graphical models and deep generative models, graph deep learning, NLP.

- **Engineer's Degree -** *École Polytechnique,* 2021 – Present

  One of France's top-ranking master's-level engineering schools. Specializing in applied mathematics (courses in Operations Research, Optimization and Control, Statistics). Engineer's degree to be awarded in 2025. Ranked 23rd out of 443 on graduation.

- **Classe préparatoire: mathematics and physics -** *Lycée Louis Le Grand,* 2019 – 2021

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

PROFESSIONAL AND RELATED EXPERIENCE

- **Research Affiliate – Grid Integration Group -** *Lawrence Berkeley National Laboratory, California,* March to August 2024

  Developed optimization algorithms to set competitive prices for long-term energy storage systems, focusing on the Unit Commitment problem and transmission constraints between states.

  Applied optimal power flow techniques to improve power systems operations.

  Analysed results for the U.S. Department of Energy (DoE) to provide insights to decision-makers, helping them make informed choices about LDES investments for a decarbonized energy future by 2050.

- **Data Science Intern – Digital Energy Solutions -** *CSEM, Switzerland,* June to September 2023

  Designed Machine and Deep Learning algorithms for solar energy production prediction

  Implemented recurrent convolutional neural networks (RCNN) for predicting cloud positions from satellite images and the physical equations governing the atmosphere

  Used graphical neural networks (GNN) to extract spatio-temporal correlations in the Swiss photovoltaic network.

PROJECTS

- **E4C Challenge – Greener Building -** *École Polytechnique,* 2024

  Developed school building energy consumption prediction models (gradient boosting, random forest and LSTM), then established emission reduction measures in a group of 4. Won first place and a €3,000 prize.

- **Deep Learning project** - *École Polytechnique,* 2023

  Created and trained Deep Learning models in groups of 2 to solve a computer-generated image classification problem (PyTorch).

- **Collective Scientific Project -** *École Polytechnique,* 2022

  Designed a local weather simulator in real time in a group of 4 (using Unity).

  Nominated among the school's top 10 projects.