Thomas Gaviard

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Education

University of Lille — Lille, France
MSc in Data Science, Research Track — *Sep 2022 – Apr 2024*

- Relevant coursework: Linear Algebra, Probability, Statistics, Convex Optimization, Signal Processing, High Performance Computing, Machine Learning, Deep Learning, NLP, Computer Vision, Reinforcement Learning, Databases
- All courses are taught in english ; 6 months long research project

Centrale Lille — Lille, France
MEng in General Engineering — *Sep 2019 – Aug 2022*

- Relevant coursework: Math, Physics, Computer Science, Project Management
- Gap year followed by a double degree in the Master of Data Science of the Univeristy of Lille

Lycée Louis-Le-Grand — Paris, France
Preparatory classes, Mathematics, Physics and Chemistry — *Sep 2016 – Jul 2019*

Research Experience

INRIA - RAPSODI team — Lille, France
First year master thesis, Optimization and Numerical Analysis — *Oct 2022 – Apr 2023*

- "Numerical study of dynamical models of interacting Voronoi cells and their continuous limits", supervised by Claire Chainais and Andrea Natale.
- Spatial decomposition of the domain and resolution of an ODE whose potential energy is in itself a convexe optimization problem.

INRIA - MAGNET team — Lille, France
Internship, Machine Learning — *Mar 2022 – Aug 2022*

- "Fairness in Federated Learning", supervised by Michael Perrot.
- Produced an in-depth taxonomy of the existing federated and fair algorithms.
- Proposed and implemented a novel approach based on a weighting gradients scheme.

Work Experience

Euratechnologies — Lille, France
Internship, Data Scientist — *Sep 2021 – Feb 2022*

- 3 projects of 2 months in companies, supervised by professors of Centrale Lille.
- **Project 1:** Detection of bots in a multiplayer online video game via their behaviour.
  Processed a big amount of data (50 Go).
  Implemented a framework from a research paper based on Event2Vec and Attention-based LSTM.
- **Project 2:** Detection of defects on railway rails.
  Fine-tuned the object detection model Yolov5 and studied expert systems.
- **Project 3:** Multivariate and multi-steps sales forecasting.
  Carried on exploratory statistics and implemented a LSTM-based methods.
  Presented the results on a web interface and deployed a pipeline on Google Cloud Platform.

Helean — Paris, France
Internship, Data Scientist — *Jul 2021 – Aug 2021*

- Improved their forecasting model using features engineering.
- Enriched data with web scraping.

Skills

Programming: Python, PostgreSQL, Matlab, R, LaTeX

Languages: French (Native), English (Professional), Spanish (Intermediate)

Hobbies

Rugby, Music, Poker