Thomas Gaviard

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Education

University of Lille — Lille, France
MSc in Data Science, Research Track, all courses in English — *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, Bayesian Learning
- Research projects: *"Numerical study of dynamical models of interacting Voronoi cells and their continuous limits"* and *"Multi-scale novel view synthesis of bounded scenes"*

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 at the University of Lille
- Student clubs: Rugby team, DJing

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

Research Experience

Heriot-Watt University, School of Mathematics & CS — Edinburgh, UK
Internship, Machine Learning — *Apr 2024 – Sep 2024*

- "Deep unfolded networks for generative models", supervised by Audrey Repetti.
- Studied unfolded networks in depth for the dual forward-backward algorithm, based on Repetti et al. (2022).
- Researched denoising diffusion probabilistic models (DDPM) and improved variants, based on Ho et al. (2020) and Nichol & Dhariwal (2021).
- Conducted extensive study of DDPM training scheme to optimize an unfolded network of approximately 10k parameters, nearly matching 100M parameters baseline model on MNIST.
- Attended conferences and seminars on inverse problems and generative models at the Maxwell Institute of the University of Edinburgh.

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 fairness-enforcing algorithms.
- Proposed and implemented a novel approach based on a weighting gradients scheme.
- Attended conferences and seminars on subjects related to federated learning, differential privacy, and fairness in machine learning.

Work Experience

Stereolabs — Paris, France
Full-time, Research Engineer — *Oct 2024 – Nov 2025*

- Worked on projects related to neural stereo matching and semantic understanding applications.
- Implemented a codebase to train and evaluate models, from experimentation to production.
- Designed and implemented state-of-the-art approaches with a strong focus on latency, robustness and generalization.
- Conducted extensive experiments on the following topics: stereo matching, semantic segmentation, monocular depth, 3D foundation models, multi-task learning, Jetson-based inference, etc.

Stereolabs — Paris, France
Internship, Research Engineer — *Apr 2023 – Aug 2023*

- Conducted comprehensive analysis of neural stereo matching across architecture design, optimization strategies, and data processing pipelines.
- Performed extensive literature review of over 30 research papers to contribute to technology watch and identify state-of-the-art approaches.

Euratechnologies Lille, France

Internship, Data Scientist *Sep 2021 – Feb 2022*

- **Project 1:** Bots detection in a MMO video game (Event2Vec and Attention-based LSTM).
- **Project 2:** Detection of defects on railway rails (YOLO architecture).
- **Project 3:** Multivariate and multi-steps sales forecasting (LSTM).

Helean Paris, France

Internship, Data Scientist *Jul 2021 – Aug 2021*

- Improved their forecasting model using feature engineering and enriched their data with web scraping.

Awards

AMD Open Robotics Hackathon Paris, France

2nd Place – Hosted by AMD & Hugging Face *Dec 2025*

- Built a bimanual SO-101 robot that picks items, scans barcodes, and sorts them based on the scanner's visual signal.
- Entire workflow controlled by a single ACT policy trained on 200 episodes achieving a high success rate.

Skills

Programming: Experimented with Python for Machine/Deep Learning (especially PyTorch and Lightning), LaTeX, GPU programming (CUDA, Triton)

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

Hobbies

Rugby (15y), Triathlon, Music (cello, electronic), Chess (1500 ELO on chess.com)

Working on LeRobot, see this work in progress: LeChess