Mattéo **Eléouet**

Looking for PhD Position

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Education

Data Science Tech Institute — *Academic Results: **17.53** / 20.00*

Master of Science in Applied Machine Learning

- Completed an English-taught curriculum with a strong focus on Machine Learning and Data Science, including advanced courses in Statistical & Probability Theory, Linear Algebra, and Convex Optimization.
- Mathematical foundations of statistical learning and uncertainty, causal inference for explainability.
- Learn in a variety of domains such as Natural Language Processing, Computer Vision, Python programming, R, Text Mining, and Data Analysis.

Sophia Antipolis, France - 2022 – 2024

Epitech — *Academic Results: **15.5** / 20.00*

Bachelor's Degree in Computer Science

- Graduated as Major de Promotion 1/16
- Focused on software engineering (C, C++, Java, JS frameworks), DevOps (Docker, Kubernetes), and low-level computing (Operating Systems, Computer Architecture).
- Low-level computing, including in-depth studies on Operating Systems and Computer Architecture, focusing on the fundamental workings and principles of computers.

Nice, France - 2021 – 2022

La Croix Rouge & ISEN — *Academic Results: **16.38** / 20.00*

Pre-engineering in Computer Science and Networking option to engineering school (BTS SN-IR)

- 18.28 average in mathematics — 17.2 average in english — 19.5/20 end of the year project in Computer Science.

Brest, France - 2019 – 2021

Experience

Thales Alenia Space — *Cannes, France*

Research Engineer apprentice in Computer Vision — *Sep. 2022 - Sep. 2024*

- Image quality lab, Image restoration, Super-Resolution, Simulation optimisation.
- Conducted comprehensive research and evaluation of image restoration techniques using ConvNets and Visual Transformers, focusing on interpretability and application effectiveness.
- Created special metrics and loss functions for image quality assessment and model evaluation.
- Designed and implemented custom architectures with PyTorch, including GANs, Swin Transformers, Diffusion models and ConvNets. Employed advanced techniques such as knowledge distillation to optimize network efficiency and performance.
- Wrote scientific internal reports detailing research findings and model evaluation results.

AzurIA at IRT Saint Exupéry — *Sophia Antipolis, France*

Machine Learning Operations Apprentice — *Dec. 2021 - Sep. 2022*

- Developed and implemented low-energy models for embedded systems, incorporating GitOps, documentation, testing, ONNX, and Docker on Nvidia Jetson platforms.
- Designed Deep Learning models using PyTorch, specifically tailored for embedded system applications.
- Collaborated with teams to develop custom CUDA kernels, enhancing computational efficiency and performance.

Thales — *Brest, France*

Research Intern — *Feb 2021 – Apr. 2021*

- Studying algebraic topology for data preprocessing (barcode, mathematical landscape, persistent homology)
- Studying state of the art models for image processing

Languages

English : C1 certified — 180/180 Cambridge LinguaSkill

French : Native Speaker

Certifications

Stanford : Machine Learning with Matlab, Andrew Ng

Imperial College London : Mathematics for ML

Inria : Machine Learning with Scikit-Learn

Univ. Alberta : Reinforcement Learning, in progress 30%

Skills

Mathematics	Numerical Optimization, Operations Research, Simulation on Mathematical Modelling, Probability & Statistics, Imaging, Signal Processing
Computer Science	**Python**, **PyTorch**, C++ (CUDA), R, Matlab, Bash, TF, SQL, Docker, Git, LaTeX, SWE and maintenance, Linux, Some RL knowledge, Basic AWS Skills
Computer Vision	3D Reconsturction (NeRF), Remote Sensing GIS etc, Image segmentation, Classical maths for CV, Knowledge Distillation, Gimp, Image Quality, DL Algorithms (ViT, ResNet, Swin etc)
NLP & LLM	Transformer arch & Attention Mechanisms, Text classification, QA, Summarization Translation, Tokenizers, Fine-Tuning, Scalability, Sparse Attention

Personal Project

Introduction to Deep Learning (in french) *Github link*

Self-Published eBook *WIP, Expected May 2024*

- Writting a comprehensive guide exploring mathematics and underlying theories that form the bedrock of Deep Learning, ranging from perceptrons to transformer architectures, aimed at demystifying complex concepts for a broad audience.
- An educational toolkit that brings together a wide range of resources, including extensive downloadable content, detailed code snippets, comprehensive datasets and a case study repository, to enhance open learning.

Interpreting Neural Networks with Bayesian Method *Github link*

Deep Learning Theory *2023*

- Implemented a Bayesian approach to neural network classification on the MNIST dataset, introducing weight uncertainty for more nuanced prediction analysis.
- Based on the research paper « Weight Uncertainty in Neural Networks » by Blundell et al.

Exploring Deep Dream *Github link*

Computer Vision *2023*

- Applied the DeepDream algorithm to create surreal images using VGG19, Vision Transformer (ViT), and InceptionV3 models.

References

Marjorie Bellezzi : Training supervisor
Hanna Abi Akl : School mentor

Laurène Glandus : Training supervisor
Pr Jacques Blum - School mentor