

MADELEINE HUEBER



+33 7 82 33 03 41



madeleine.hueber@epfl.ch



madhueb.github.io



<https://fr.linkedin.com/in/madeleine-hueber>

A highly motivated Master's student in Data Science interested in challenges in AI and its applications across diverse domains. Currently seeking a Master's thesis opportunity in a technology-driven company.

Education

EPFL, Lausanne, Switzerland

2024 – now

- Master's in Data Science, with specialized courses in machine learning, natural language processing, statistics and other advanced topics
- Gained hands-on experience with various applications of Machine and Deep Learning through practical projects.

Ecole Polytechnique, Palaiseau, France

2021 – 2024

- Master's level program (Cycle Ingénieur X2021) in mathematics and computer science, specialized in Applied Mathematics.
- Specialization courses include Machine & Deep Learning, Statistical Learning, and Stochastic Modeling.
- France's leading university in science and engineering

Lycée Louis-le-Grand, Paris, France

2029–2021

- *Classe Préparatoire (MPSI/MP*)*: an intensive two-year program focusing on maths and physics
- Prepared highly competitive entrance exams to top French engineering schools.

Projects

Semester Project – *Creative decoding for LLMs (NLP Lab, EPFL)*

Sep – Dec 2025

- Exploring novel decoding strategies for large language models to promote fine-grained creativity (novelty, surprise, diversity).

Course Project – *Creating an AI assistant for STEM education*

Feb – Jun 2025

- Developed a multi-system AI assistant for STEM education, integrating reward model, MCQA, RAG, and quantized inference components.

Course Project – *EEG Seizure Detection*

Feb – Jun 2025

- Developed different graph-based models to capture spatial relationships between EEG electrodes for seizure detection.

ML4Science Project – *Benchmarking MIL methods (Bunne Lab)*

Sep – Dec 2024

- Benchmark Multiple Instance Learning (MIL) algorithms for classifying Whole Slide Images in histopathology.

Scientific Team Project (PSC) – *Currency Position Optimization*

2022 – 2023

- Work with BNP Paribas to optimize bank capital provisions for correlated foreign currency positions.
- Develop algorithms to minimize immobilized capital while complying with regulatory constraints.

Experimental Project (TIPE) – *Percolation effect and Forest fire simulation*

2020 – 2021

- Model the spread of fires through the percolation effect and evaluate critical threshold for fire propagation.

Work Experience

Part time Data Engineer – ICES, Switzerland

Mar 2025 – now

- Contribute to the development of a predictive seismic risk tool and maintain data pipelines for large-scale geospatial and demographic datasets.
- Develop algorithmic solutions for data challenges, such as handling missing data or spatial segmentation of populations.

Research intern – IICD, Columbia University

Apr – Jul 2024

- Evaluate and benchmark Copy Number Alteration (CNA) timing algorithms (CancerTiming, MutationTimeR, GRITIC) using the CINner simulation framework.
- Explore adaptation of algorithms for single-cell sequencing data, addressing challenges such as false negatives and low coverage.

Carbon engineer intern – Carbometrix, Paris

Jun– Aug 2023

- Contributed to carbon footprint calculations and conducted sector research to support sustainability assessments.
- Assisted with platform development and various data-related tasks for the carbon analytics team.

Military internship – Gendarmerie, Vannes

Dec 2021 – Apr 2022

- Experienced 6 months as the assistant of the Commander of a military police in Vannes (France) in daily operations.
- Faced risky situations during patrols, developing adaptability and analytical skills.

Volunteer work – Voltaire Program, Paris

2018–2019

- Helped middle school students with domestic issues to do their homework and monitored their progress over the year.

Skills

Language

French (native)	German (B1)
English (C1)	Italian (beginner)

Programming

- Languages : Python, R, Java, SQL
- Tools : TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy ...

Extracurricular Activities

Art

- Passion for painting, drawing, and sewing.
- Member of Polytechnique’s Broadway team, in charge of costumes and sets.
- Bachelor degree in History and Art History (Nanterre University) in 2023 as part of a partnership with Polytechnique.

Student Associative

- Co-organised a student festival (OktoBB) gathering ~1500 attendees and 250 volunteers.
- Organised a conference on the "backlash" phenomenon during Polytechnique’s Women’s Rights Week.

Sport

- Part of the Basket-Ball team at Polytechnique
- 10 years of ballet class
- Advanced Open Water SCUBA Diver