

Lucas Mebille

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Seeking a 5-month AI research internship from April 2026

Interested in pursuing a PhD

Education

PSL Research University (ENS Ulm, Mines Paris, Dauphine)

Sept 2025 - Present

MSc in Artificial Intelligence, Systems and Data (IASD)

Paris, France

- Relevant coursework: Reinforcement Learning, Large Language Models, Optimal Transport, Deep Learning for Image Analysis
- **Excellence Scholarship:** Awarded the PR[AI]RIE Institute Scholarship for academic merit (2025-2026)

École Polytechnique

2022 - 2025

Engineering Degree (Ingénieur polytechnicien)

Palaiseau, France

- **Major in Applied Mathematics:** Statistics, Optimization, Markov Chains, Machine Learning for Scientific Computing, Signal Processing, Distributed ML, AI Alignment, Quantum Computing
- **Minor in Computer Science:** Algorithm Design, Data Structures, Deep Learning, NLP, Java
- Additional coursework: Neuroscience, Quantum Mechanics, Fluid Mechanics
- Scikit-Learn Certification (DataScientest, 2024) - ML algorithms implementation

Lycée Blaise Pascal

2020 - 2022

Preparatory Classes in Mathematics and Physics (CPGE)

Orsay, France

- Intensive two-year program preparing for nationwide competitive exams to Grandes Écoles
- Coursework: Classical and Quantum Physics, Mathematical Analysis, Algebra

Research Experience

Research Intern

Apr - Aug 2025

Kavli IPMU, University of Tokyo, supervised by Benjamin Horowitz

Tokyo, Japan

- Developed differentiable simulator of Cold Dark Matter for Bayesian inference of initial conditions in JAX
- Studied stochastic interpolants for Cold Dark Matter simulations

Academic Projects

Computer Vision for Football Analytics

Oct - Dec 2024

- Coded YOLOv11-based pipeline with OpenCV for player detection and metrics tracking

Academic Kaggle Challenge: AI for cheese image classification

May 2024

- **1st place/36 teams:** Classified 37 cheese varieties using synthetic data from fine-tuned Diffusion models.
- Fine-tuned DinoV2 model for classification.

Stadium Evacuation Optimization

2023 - 2024

- Collaborated with Stade de Reims FC to model crowd evacuation using linear programming and flow theory

- Developed Python (NetworkX) simulations to identify and reduce evacuation bottlenecks

Professional Experience

Digital Innovation Intern

TotalEnergies E&P

Jun 2024 - May 2025

Rio de Janeiro, Brazil

- Designed and delivered training modules on generative AI (LLMs and Diffusion Models)
- Developed automation tools that saved engineers one workday per week

Officer Cadet

French Military Police (Gendarmerie Nationale)

Oct 2022 - Apr 2023

Clermont, France

- Created Excel-based automation tools for cross-unit resource management
- Assisted in daily operational tasks and administrative processes

Technical Skills

Programming: Python, Java, SQL, VBA

Libraries: PyTorch, JAX, Scikit-Learn, OpenCV, NumPy, SciPy, Pandas, NetworkX

Tools: L^AT_EX, Microsoft Power Platform, Git

Extracurricular

Physics Oral Examiner

Lycée Blaise Pascal

Sept 2023 - Apr 2024

Orsay, France

- Conducted weekly oral examinations for students preparing for Grandes Écoles entrance exams

Conference Organizer

Tribunes de l'X, École Polytechnique

Jan 2024 - Jan 2025

- **Moderated discussions** with speakers, including Gérard Araud (Former French Ambassador to the USA), Joëlle Barral (Google DeepMind Research Director), and Xavier Niel (French entrepreneur), engaging an audience of up to **600 attendees**.

Business Development Manager

XProjets Junior Enterprise

Apr 2023 - Nov 2024

- Led business strategy resulting in 7% revenue growth (€225k+ annual turnover)
- Established partnerships with La French Tech and École Polytechnique's startup incubator
- Managed combinatorial optimization project for medical exam grading automation

Sports & Hobbies

- **Football:** Vice-Captain and Goalkeeper, École Polytechnique's A-Team
- **Hobbies:** Hiking, Literature

Languages

French: Native

English: C1 (TOEFL iBT: 107/120)

Mandarin: HSK2