

# Mathieu Isoard

PhD and ML researcher

CRIION, Mertelsmann Foundation  
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## Education

- 2024 • **Machine Learning with graphs**, Stanford University, Online  
Artificial Intelligence Professional Program, completed with a score of 99.7%
- 2017  
2020 • **PhD**, LPTMS, Paris-Saclay University, Orsay  
Theoretical study of quantum correlations and nonlinear fluctuations in quantum gases  
**Technical skills:** Nonlinear differential equations, numerical methods, data processing
- 2013  
2017 • **Bachelor's and Master's degrees**, École Normale Supérieure Paris-Saclay, École Normale Supérieure Ulm, Paris
- 2013 • **Admitted at École Normale Supérieure Paris-Saclay**

## Experience

- 2025 • **ML researcher in cancer research**, Mertelsmann Foundation, CRIION, Freiburg, Germany  
Cell medical datasets alignment, domain shifts mitigation and image classification  
**Technical skills:** Machine and deep learning, data visualization, foundation models, cell images classification, medical data, deployment
- 2022  
2024 • **CNRS post-doctoral researcher in quantum computing and applied maths**, LKB, Paris-Sorbonne University, Paris,  
**Technical skills:** Machine and deep learning, statistical data analysis, Fisher information and probability distributions, genetic algorithms
- 2020  
2022 • **Post-doctoral researcher in quantum communication**, Albert-Ludwigs-Universität, Freiburg, Germany,  
**Technical skills:** numerical simulations, statistical data analysis, applied maths

## Skills

- General skills    Machine and deep learning, data analysis, conduct research and projects from A to Z, ability to solve difficult (analytical and numerical) problems, communication skills, management and supervision, adaptability and ability to learn fast, curiosity
- Programming    C++, Python (scikit-learn, tensorflow, PyTorch, PyTorch geometrics), Docker, FastAPI, DevOps tools, mathematica

## Languages

**French:** native

*Mother Tongue*

**English:** fluent

*Daily practice, all work performed in English*

**German, Italian:** bases

*B1 level – in progress*

## Communication

2016

**More than 20 presentation in various workshops throughout the world**

2018

**Numerous publications in journals with peer-reviews**

1 recent publication in deep learning in the prestigious journal *Physical Review Letters*: Correlation-pattern-based Continuous-variable Entanglement Detection through Neural Networks, Xiaoting Gao, Mathieu Isoard, et al., PRL **132**, 220202 (2024)

Google Scholar link: <https://scholar.google.com/citations?user=8bsIOgoAAAAJ&hl=fr&oi=ao>

## Teaching and supervision

2021

**Supervision**, *Albert-Ludwigs-Universität, Paris-Sorbonne University*

2 students in Bachelor's degree, one student in Master, 2 students in PhD

2017

2024

**Teaching**, *Paris-Saclay University, Albert-Ludwigs-Universität, Paris-Sorbonne University, École Normale Supérieure Ulm*

Bachelor's and Master's degrees

## Other activities

2021

2022

**Organization of weekly seminars**, *Quantum Optics and Statistics*, Albert-Ludwigs-Universität, Freiburg, Germany

2017

2020

**PhD Club**, *LPTMS*

Organizer, together with Nina Javerzat

2017

2020

**PhD representative**, *LPTMS*

2021

**Workshop organization: Analogue Gravity symposium**, *Rennes, France*

Organizer together with Maxime Jacquet et Theo Torres

## Interests

**Sport** Weightlifting, running

**Hobby** Reading, theater, museum, AI technologies