

Pierre Fernandez

☎ +33613382998 ✉ pierre.fernandez.2017@polytechnique.org 📧 pierrefdz 🌐 pierrefdz 📄 pierrefdz.github.io

🎓 EDUCATION

Inria & Meta AI, PhD in Mathematics and Computer Science 2022 – present
Advisors: Teddy Furon (Inria) & Hervé Jégou, Matthijs Douze (Meta AI) Rennes & Paris, France

Paris-Saclay University, MSc in Mathematics, Vision and Learning ("MVA") 2020 – 2021
World's best university in Mathematics in Shanghai's ranking 2021 - with Highest Honors, GPA: 4.0/4.0 Paris, France
Relevant coursework:

- Convex optimization, Kernel methods, RL, Sequential learning, Graphs in ML, Computational statistics
- 3D Computer vision, Object recognition, Point clouds, Deep learning in practice, Digital humanities meet AI

École des Ponts ParisTech, Double Degree: Masters in Mathematical Engineering 2020 – 2021
Relevant coursework: Law, Accounting, Project with Renault: OCR integration in cars navigation system Remote, France

École polytechnique, BSc & MScT in Artificial Intelligence and Visual Computing 2017 – 2021
France's best engineering school - with Highest Honors, GPA: 3.95/4.0 Palaiseau, France
Awards:

- Outstanding Investment & Outstanding Leadership
- Research Internship Award in Computer Science for my first internship at Dassault Systemes (top 5%)

Relevant coursework:

- Machine & Deep Learning, Statistics, Markov Chains, Random Processes, Fundamentals of Probabilities
- Computer vision, Shape analysis, Computer graphics, Data visualization, Topological data analysis
- Molecular biology and genetic information, Pathologies and therapeutic strategies, Neuroscience

Stanislas, Physics and Chemistry 2015 – 2017
Two-year intensive program for the entrance exams to top French Engineering schools Paris, France

👤 WORK & RESEARCH EXPERIENCE

Meta AI, CIFRE PhD student 2022 – present
Meta AI Paris team & Linkmedia team at Inria Rennes & Paris, France
Research on Machine Learning and content protection (watermarking, data security, privacy, etc.)

Meta AI, AI Research Intern May 2021 – Sep. 2021
Meta AI Paris team, advised by Hervé Jégou, Matthijs Douze and Alexandre Sablayrolles Remote, France

- Robust image watermarking in self-supervised latent spaces, led to a publication at ICASSP 2022
- Topics: watermarking, steganography, self-supervised learning, computer vision

Dassault Systemes, Research Intern Apr. 2020 – Aug. 2020 & Sep. 2021 – Dec. 2021
World leader company in 3D design & engineering software 3DS Campus - Vélizy, France

- Research on design generation and learning of autonomous virtual-soft-robots (Taichi, PyTorch)
- Research on differentiable physics for robotics and structural optimization (Jax, Taichi, PyTorch)
- Topics: automatic differentiation, physics simulation, topology optimization, genetic algorithms (NEAT, CMA-ES)

Incepto Medical, Software Engineer Intern Jul. 2019 – Sep. 2019
Start-up developing and gathering AI applications for medical imaging Station F - Paris, France

- Developed a visualization tool to analyze annotations and results of deep learning algorithms (AngularJS)
- Discussed with radiologists and data scientists to establish the needs of the tool

NeuroSpin, Neural Representation of Temporal Sequences (Neuroscience) Aug. 2018 – May. 2019
Scientific group project at Polytechnique - team of 6 students - 1 day/ week Saclay, France
Goal: Understand how the brain encodes temporal sequences and patterns

- Conceived a grammar encoding of sequences, develop a smartphone app experiment (ReactJS), analyzed the results
- Nominated for best project (top 10%)

Military Experience - Prytanée National Militaire, Section Head Sep. 2017 – Apr. 2018
School and preparatory class for future officers in the French army La Flèche, France

- Led 2 sections of 25 students and conducted Physics and Chemistry courses and exercises

⚙️ TECHNICAL SKILLS

Languages French, Spanish (Working proficiency), English (Working proficiency: TOEFL 110/120 - TOEIC 970/990)
Programming Python (PyTorch, Jax, Taichi), JavaScript (React, AngularJS, ThreeJS, D3), HTML, SQL⁽⁻⁾, C++⁽⁻⁾, Java⁽⁻⁾

📄 ADDITIONAL INFORMATION & EXTRACURRICULAR

Sport Tennis, Climbing, Running
Education Maths oral examiner (2h/ week) at Stanislas in 2018-2019 & Correction of 100 algebra exams in May 2018
Social action I was president of a school organization that organized a humanitarian trip to Tahiti
One-and-a-half-month summer humanitarian internship in Papeete at FACE Polynesia
School clubs I was vice-president of the graphic design organization of Polytechnique
I organized of a discovery trip to state-of-the-art Israeli start-ups, universities and R&D centers