





# PIERRE FERNANDEZ

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*Research Scientist specializing in watermarking, provenance and responsible generative AI. I develop methods to detect, attribute, and trace AI-generated content across modalities (text, image, video, audio).*

## EXPERIENCE

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**Meta, Research Scientist** **2024 – present**  
*FAIR (Fundamental AI Research), Watermarking team* *Paris, France*

Primary contributor to watermarking research and production efforts.

- **Research & External impact:** Developed methods for WM multi-modal AR models; trained SOTA image and video WM models; created a provable causal attribution method for LLMs (2000x faster than k-gram lookups). Released Meta Seal, open-sourced watermarking tools: TextSeal, VideoSeal (500+ stars), Watermark-Anything (1000+ stars)
- **Policy Impact:** Technical advisor for EU AI Act code of practice on labelling AI-generated content
- **Internal impact:** Research and models deployed in FB videos, IG feed (→\$1.4M/yr savings by automating copy detection), MovieGen, Imagine (for compliance and detection of GenAI content)
- Team building: contributed to watermarking team creation (0 → 8) in one year
- Leadership: mentored 1 postdoc, 1 PhD student (both now hired in the team), 1 intern (paper published at NeurIPS)

**Meta & Inria, PhD student** **2021 – 2024**  
*FAIR (Fundamental AI Research) & Linkmedia team at Inria* *Rennes & Paris, France*

Started the watermarking research at Meta as part of FAIR Paris PhD program

- **Research & External impact:** First author at ICCV, ICASSP, NeurIPS, ICLR, ICML: Stable Signature (400+ citations); AudioSeal (100+ citations, 500+ stars); better statistical tests for LLM watermarks (100+ citations, best student paper at WIFS); radioactive watermarking (NeurIPS spotlight). Trained/fine-tuned 1B+ models across modalities.
- **Internal impact:** Developed watermarking for Meta Imagine (100k daily users), Seamless, Audiobox (Instagram auto-dubbing)
- Miscellaneous: developed video/image classification fine-tuning and evaluations for DINOv2

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

- Research on differentiable physics for robotics and structural optimization as a replacement for RL (using Jax and Taichi)
- 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 (using AngularJS)

## EDUCATION

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**Meta & Inria, PhD in Mathematics and Computer Science** **2021 – 2025**  
*Defended Jan. 2025. Advisors: Teddy Furon (Inria), Hervé Jégou (FAIR), Matthijs Douze (FAIR)* *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*

**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 for involvement in school community life
- Research Internship Award in Computer Science for my first internship at Dassault Systemes (top 5%)
- Ranked 4<sup>th</sup> at the national entrance exams (over 1,000 candidates) and top 10% at the exit

## PUBLICATIONS

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*h-index: 13 - Citations: 9,800+ (Google Scholar, January 2026)*

> **Selected publications where I was a core contributor**

**How Good is Post-Hoc Watermarking With Language Model Rephrasing?** **December 2025**  
*Pierre Fernandez\*, Tom Sander\*, et al.*  
CoRR, arXiv

<b>Pixel Seal: Adversarial-only Training for Invisible Image and Video Watermarking,</b> <i>Tomáš Souček*, Pierre Fernandez*, et al.</i> CoRR, arXiv	December 2025
<b>Watermarking Autoregressive Image Generation,</b> <i>Nikola Jovanović, Ismail Labiad, Tomáš Souček, Martin Vechev, Pierre Fernandez</i> Neural Information Processing Systems (NeurIPS)	September 2025
<b>Watermarking Makes Language Models Radioactive,</b> <i>Tom Sander*, Pierre Fernandez*, Alain Durmus, Matthijs Douze, Teddy Furon</i> Neural Information Processing Systems (NeurIPS) - Spotlight (top 10%)	December 2024
<b>Proactive Detection of Voice Cloning with Localized Watermarking,</b> <i>Robin San Roman*, Pierre Fernandez*, Alexandre Defossez, Teddy Furon, Tuan Tran, Hady Elsahar</i> International Conference on Machine Learning (ICML)	July 2024
<b>Three Bricks to Consolidate Watermarks for Large Language Models,</b> <i>Pierre Fernandez, Antoine Chaffin, Karim Tit, Vivien Chappellier, Teddy Furon</i> International Workshop on Information Forensics and Security (WIFS) - Best student paper	November 2023
<b>The Stable Signature: Rooting Watermarks in Latent Diffusion Models,</b> <i>Pierre Fernandez, Guillaume Couairon, Hervé Jégou, Matthijs Douze, Teddy Furon</i> International Conference on Computer Vision (ICCV)	October 2023
> <b>Other important publications (for full, see my Scholar page)</b>	
<b>Seamless: Multilingual Expressive and Streaming Speech Translation,</b> <i>Seamless Communication et al.</i> CoRR, arXiv	December 2023
<b>A Handbook of Self-Supervised Learning,</b> <i>Randall Balestriero et al.</i> CoRR, arXiv	March 2023
<b>DINOv2: Learning Robust Visual Features without Supervision,</b> <i>Maxime Oquab et al.</i> Transactions on Machine Learning Research (TMLR)	March 2023

## INVITED TALKS

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Geneva Institute, TU Berlin, Sony CSL, Photoroom, Inria, Qualcomm AI, X-IA, AAAI Workshop and others

## ADDITIONAL INFORMATION

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<b>Languages</b>	French, Spanish (Working proficiency), English (Working proficiency: TOEFL 110/120 - TOEIC 970/990)
<b>Programming</b>	Python (PyTorch, Distributed PyTorch/FSDP, Jax), Slurm, JavaScript, HTML, SQL <sup>(-)</sup> , C++ <sup>(-)</sup> , Java <sup>(-)</sup>
<b>Sport</b>	Tennis, Climbing, Running
<b>Community</b>	Reviewer for CVPR, ICCV, ICLR, ICML, IEEE TIFS, IJCV, JMLR, Multimedia Forensics, etc. Co-organized the 1st Workshop on GenAI Watermarking at ICLR 2025 Organized a special session on watermarking for generative models at ACM IH&MMSec
<b>Misc.</b>	Jury for GenAI start-up pitch (VivaTech 2023), Advisor for Kartoan.ai (Station F acceleration program)