

Thibault de Surrel

Paris, France | thibault.de-surrel@lamsade.dauphine.fr | +33 7 81 69 17 81 | thibaultdesurrel.github.io
linkedin.com/in/thibault-de-surrel/ | github.com/thibaultdesurrel

Education

- LAMSADE, Univ. Paris Dauphine - PSL** (Paris, France), PhD in Computer Science 2023 – Present
- **Title of the PhD:** *Learning context invariant representations for EEG data.*
 - **Supervisors:** Florian Yger, Sylvain Chevallier and Fabien Lotte.
- ENS Paris-Saclay** (Gif-sur-Yvette, France), Master 2 MVA: Mathematics, Vision, Learning 2022 – 2023
- Master focused on the mathematical aspects of data science, numerical data acquisition, processing and automatic interpretation.
- ENS Paris-Saclay** (Gif-sur-Yvette, France), *Master 2 Formation pour l'enseignement supérieur* 2021 – 2022
- Master of Science in Mathematics teaching.
 - **Agrégation externe de Mathématiques.**
- ENSTA Paris** (Palaiseau, France), Engineer's Degree - *Diplôme d'Ingenieur* 2019 – 2023
- ENSTA Paris is amongst the top 5 engineering schools in France. Major in applied mathematics.
- Lycée Claude Fauriel** (St-Etienne, France), Preparatory class - *Classes préparatoires* 2017 – 2019
- Intensive two-year course in mathematics and physics to prepare for National exams to enter top French engineering schools.

Internships

- Research internship**, LAMSADE, Univ. Paris Dauphine - PSL (Paris, France) Apr. 2023 – Sep. 2023
- Supervised by: Florian Yger, Sylvain Chevallier and Fabien Lotte
- Matching trajectories of covariance matrices on the Riemannian manifold of symmetric definite positive (SPD) matrices with application on EEG data.
 - Building Riemannian versions of the t-SNE and MDS algorithms to visualize high-dimensional SPD matrices.
- Research internship**, DataShape team, Inria (Sophia-Antipolis, France) May 2021 – Aug. 2021
- Supervised by: Mathieu Carrière
- Build a neural network to predict persistence images given a point cloud.
 - Build a VAE to learn the joint distribution of persistence images and point clouds.

Publications

- Wrapped One-Class Riemannian EEG classifier for BCI-detection of anesthetic states** Sep. 2026
- Valérie Marissens Cueva*, **Thibault de Surrel***, Laurent Bougrain, Seyed Javad Bidgoli, Guy Cheron, Ana Maria Cebolla Alvarez, Claude Meistelman, Fabien Lotte, Florian Yger and Sébastien Rimbart (* *Equal contribution*)
- Graz BCI Conference 2026*
- Riemannian adversarial attacks on Symmetric Positive Definite matrices** May 2026
- Dimitri Timoz, **Thibault de Surrel** and Florian Yger
- ICASSP 2026*
- SPDNet-AE: a Compact SPD Representation through Riemannian Autoencoding** Apr. 2026
- Charlotte Boucherie*, **Thibault de Surrel*** and Florian Yger (* *Equal contribution*)
- ESANN 2026*
- A probabilistic view on Riemannian machine learning models for SPD matrices** Oct. 2025
- Thibault de Surrel**, Florian Yger, Fabien Lotte and Sylvain Chevallier

Geometric Science of Information (GSI)

Interpretability of Riemannian tools used in Brain Computer Interfaces Sep. 2025

Thibault de Surrel, Tristan Venot, Marie-Constance Corsi and Florian Yger

IEEE Machine Learning For Signal Processing (MLSP)

Wrapped Gaussian on the manifold of Symmetric Positive Definite Matrices Jul. 2025

Thibault de Surrel, Fabien Lotte, Sylvain Chevallier and Florian Yger

International Conference on Machine Learning (ICML)

Geometry-Aware visualization of high dimensional Symmetric Positive Definite matrices Feb. 2025

Thibault de Surrel, Sylvain Chevallier, Fabien Lotte and Florian Yger

Transactions on Machine Learning Research

Averaging trajectories on the manifold of symmetric positive definite matrices Aug. 2024

Thibault de Surrel, Florian Yger, Sylvain Chevallier and Fabien Lotte

EUSIPCO

RipsNet: a general architecture for fast and robust estimation of the persistent homology of point clouds Nov. 2022

Thibault de Surrel, Felix Hensel, Mathieu Carrière, Théo Lacombe, Yuichi Ike, Hiroaki Kurihara, Marc Glisse and Frédéric Chazal

Proceedings of Topological, Algebraic, and Geometric Learning Workshops

Teaching

Linear Model and its Generalization, First year Master, Univ. Paris Dauphine - PSL 2025

Fundamental of ML, Third year Bachelor, Univ. Paris Dauphine - PSL 2024

Mathematical statistics, Third year Bachelor, Univ. Paris Dauphine - PSL 2024-2025

Algebra and numerical methods, Second year Bachelor, Univ. Paris Dauphine - PSL 2024-2025