Contact
e-mail:
emilia.siviero@unive.it

Emilia Siviero

Post-doctoral Researcher in Machine Learning and Spatial Statistics

Post-doctoral researcher

2024 -

Post-doctoral research on spatial statistics and extreme value theory, at Università Ca' Foscari Venezia (Italy), under the supervision of Ilaria Prosdocimi and Carlo Gaetan.

PhD

2020 - 2024

PhD thesis, *Statistical Learning for Spatial Data: Theory and Practice*, Télécom Paris (France), under the supervision of Stéphan Clémençon (Télécom Paris).

Journal Publication: **A Statistical Learning View of Simple Kriging** (TEST, 2023), E. Siviero, E. Chautru, S. Clémençon.

Preprint: **Flexible Parametric Inference for Space-Time Hawkes Processes** (ArXiv, 2024), E. Siviero, G. Staerman, S. Clémençon, T. Moreau.

Education

2019 - 2020

Master 2 MVA, *Mathematics for Computer Vision and Learning*, École Normale Supérieure (ENS) Paris-Saclay.
Final grade: 16.04/20, "Très Bien" (A+, with Highest Honours).
Main courses:

- Probabilistic Graphical Models
- Deep Learning
- Reinforcement Learning
- Statistical Learning
- Convolutional Neural Networks
- Bayesian Machine Learning
- Theoretical Foundations of Deep Learning

2018 - 2019

Master 1 in Applied Mathematics, Paris 11 Saclay University.
Final grade: 14.5/20, "Bien" (A).
Main courses:

- Probabilities: Markov Chain, Stochastic Process, Martingale
- Statistics
- Convex Optimization
- Operational Research
- Game Theory
- Computer Science

2016 - 2018

Second and third years, **joint degree in Mathematics and Computer Science**, Paris 7 Diderot University.
Ba. in Mathematics : final grade: 13.6/20, "Assez Bien" (B+).

Ba. in Computer Science : final grade: 14.3/20, “Bien” (A).
Main courses:

- Probabilities
- Algebra and Analysis
- Mathematical Logic
- Differential Equation
- Operating Systems and C language
- Network Programming
- Object Oriented Programming

2015 - 2016
First year, Ba. in **MIASHS** (Mathematics and Informatics Applied to Humanities and Social Sciences), Paris 1 Pantheon Sorbonne University. Final grade: 15/20, “Bien” (A).

Internships

April - September 2020
Internship, subject: *Stochastic Newton Algorithms for Optimal Transport between Probability Measures*, Institut de Mathématiques de Bordeaux (IMB).
Supervisors: Prof. Bernard Bercu (Bernard.Bercu@math.u-bordeaux1.fr), Prof. Jérémie Bigot (jeremie.bigot@math.u-bordeaux.fr), Prof. Sébastien Gadat (sebastien.gadat@math.univ-toulouse.fr).
Journal Publication: **A Stochastic Gauss–Newton Algorithm for Regularized Semi-Discrete Optimal Transport** (Information and Inference: A Journal of the IMA, 2023), B. Bercu, J. Bigot, S. Gadat, E. Siviero.

May - August 2019
Internship, subject: *Global Solutions of Nonconvex Standard Quadratic Problems (StQP) via Mixed Integer Linear Programming (MILP) Reformulations*, “La Sapienza” University, Rome, Italy.
Supervisor: Prof. Laura Palagi (palagi@diag.uniroma1.it).

June 2018
Internship, subject: *Application of Algorithms of Sequence Mining on a video database and Statistic Analysis of the results*, CNRS-ISIR, Sorbonne University.
Supervisor: Soumia Dermouche PhD (dermo_samo@hotmail.fr).

June 2017
Internship, subject: *Statistic Analysis of French Presidential Election polls, aiming at identifying possible “herding behavior” of pollsters*, CNAM.
Supervisor: Prof. Avner Bar-Hen (avner@cnam.fr).

Conferences

CAp 2022 – 5-8th July 2022
Poster presentation of the paper ”*A Statistical Learning View of Simple Kriging*” at the French conference on Machine Learning.

COMPSTAT 2022 – 23-26th August 2022
Presentation of the paper ”*A Statistical Learning View of Simple Kriging*” at the International Conference on Computational Statistics.

COMPSTAT 2024 – 27-30th August 2024
Presentation of the paper "*Flexible Parametric Inference for Space-Time Hawkes Processes*" at the International Conference on Computational Statistics.

Seminars

Automnales 2020, Mines ParisTech – 24th September 2020
Research Project (2020 Internship) Presentation: Stochastic Algorithms for Regularized Optimal Transport Problems between probability measures in the Semi-Discrete Setting. Invited by Emilie Chautru.

Chaire DSAIDIS, Télécom Paris – 15th January 2021
PhD research Project Presentation: Statistical Learning for Spatial Data: Theory and Practice.

Journées des Géostatistiques, Mines ParisTech – 16-17th September 2021
PhD research Project Presentation: Statistical Learning for Spatial Data: Theory and Practice.

Chaire DSAIDIS, Télécom Paris – June 2022
Presentation of the paper "*A Statistical Learning View of Simple Kriging*" at the Chaire DSAIDIS day.

MIND, Inria – 7th March 2023
Presentation of the paper "*A Statistical Learning View of Simple Kriging*" at the MIND team Seminar.

LAMA, Université Gustave Eiffel – 10th April 2025
Oral presentation "*Statistical Learning for Spatial Data: Theory and Practice*" at the probability and statistics seminar of the LAMA team.

Teaching Experience

2020 - 2021

- **Probability** (UE 11, Third Year students at Mines ParisTech): 20h of tutorial (class of 20 students), correction of written and oral exams, correction of mini-projects.
- **Statistical Learning and Data Mining** (MDI343, MS Big Data and IA) at Télécom Paris: 18h of practical tutorials (in Python), correction of practical exams.
- **Projet Fil Rouge** (MS Big Data and IA): project supervision during the whole year, co-supervised with the Groupe HN and Pavlo Mozharovskyi.

2021 - 2022

- **Probability** (UE 11, Third Year students) at Mines ParisTech: 1h30 of tutorial (class of 20 students).
- **Statistical Learning and Data Mining** (MDI343, MS Big Data and IA) at Télécom Paris: 9h of practical tutorials (in Python).

- **Statistics** (MDI220, Third Year Students) at Télécom Paris: 1h30 of practical tutorial (in Python) and 9h of tutorial, correction of written exams and mini-projects.
- **Linear Model** (MDI720, MS Big Data) at Télécom Paris: 18h of practical tutorials (in Python).

2022 - 2023

- **Statistical Learning and Data Mining** (MDI343, MS Big Data and IA) at Télécom Paris: 9h of practical tutorials (in Python).
- **Statistics** (MDI220, Third Year Students) at Télécom Paris: 1h30 of practical tutorials (in Python).
- **Tail Event Analysis** (DATA933) at Polytechnique: 6h of practical tutorials (in R).
- **Machine Learning** (TSIA210, Fourth Year Students) at Télécom Paris: 9h of practical tutorials (in Python), correction of practical exams.

2023 - 2024

- **Statistical Learning and Data Mining** (BGDIA703, MS Big Data and IA) at Télécom Paris: 18h of practical tutorials (in Python), correction of practical exams.
- **Statistics** (MDI220, Third Year Students) at Télécom Paris: 9h of tutorial, correction of written exams and mini-projects.
- **Machine Learning** (TSIA210, Fourth Year Students) at Télécom Paris: 6h of practical tutorials (in Python), correction of practical exams.

Collective Tasks

Chaire DSAIDIS Organizer, Télécom Paris – June 2022

Co-organized the Chaire DSAIDIS day, with Dr. Binh Nguyen and Professor Florence d'Alché-Buc. Coordinated event logistics, scheduling, and program content for an academic and industry audience.

French Workshop Organizer – February 2024 - December 2024

Co-organized a French language workshop, with Joao Paulo Bezerra De Araujo. Developed and led engaging activities, including conversational exercises and interactive games, for PhD and postdoctoral students from diverse linguistic backgrounds.

Doctoral Students' Council Member – December 2023 - December 2024

Participated in the IDS doctoral students' council, with Louis Bahrman, Nathan Huet and Cristiano Ulondu Mendes. Met bi-monthly to address PhD students' needs and initiatives, acting as a liaison with department leadership to enhance community, support, and resources for doctoral students.

Welcome Doctoral Students' Day Organizer – November 2024

Co-organized the Welcome Doctoral Students' Day, aimed at introducing new PhD students to the department. Developed a program that included presentations on departmental structure, research teams, and areas of focus.

Reviewer

AISTATS 2022, AISTATS 2023