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Emilia Siviero

PhD Student in Machine Learning and Geostatistics

PhD

2020 -

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

Journal Publication: A Statistical Learning View of Simple Kriging (TEST, 2023).

E. Siviero, E. Chautru, S. Cléménçon.

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
- Convolutional Neural Networks
- Deep Learning
- Bayesian Machine Learning
- Reinforcement Learning
- Theoretical Foundations of Deep Learning
- Statistical 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
- Operational Research
- Statistics
- Game Theory
- Convex Optimization
- 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
- Operating Systems and C language
- Algebra and Analysis
- Network Programming
- Mathematical Logic
- Object Oriented Programming
- Differential Equation

2015 - 2016

First year, Ba. in MIASSH (Mathematics and Informatics Applied to Humanities and Social Sciences), Paris 1 Pantheon Sorbonne University.
Final grade: 15/20, "Bien" (A).

Experience

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.

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.

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

Organisation of the Chaire DSAIDIS day, with Binh Nguyen (Post-Doc at Télécom Paris) and Florence d'Alché-Buc (Chair Holder, Télécom Paris). Presentation of the paper "A Statistical Learning View of Simple Kriging".

MIND, Inria – 7th March 2023

Presentation of the paper "A Statistical Learning View of Simple Kriging" at the MIND team Seminar.

Teaching Experience

2020 - 2021

- **Probability** (UE 11, First 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, First 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, First 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, First 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, Second 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, First Year Students) at Télécom Paris: 9h of tutorial, correction of written exams and mini-projects.
- **Machine Learning** (TSIA210, Second Year Students) at Télécom Paris: 6h of practical tutorials (in Python), correction of practical exams.

Reviewer

[AISTATS 2022](#), [AISTATS 2023](#)