Meyer Scetbon

Curriculum Vitae

Center for Research in Economics and Statistics
Department of Statistics
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Research Interests

Optimal transport and causality for machine learning applications.

Education

2019– **Ph.D. Candidate, Applied Mathematics**, *Center for Research in Economics and Statistics, Paris.*

- Dissertation Topic: *Causal Inference through Optimal Transport.*
- Advisor: Marco Cuturi.

2017–2018 **M.Sc. in Applied Mathematics**, *École normale supérieure Paris-Saclay, Paris.*

- Specialty in Mathematics, Vision and Learning.
- Obtained with high honors.

2015–2019 **École normale supérieure Paris-Saclay**, Paris.

- One of France's leading universities for high-level scientific training.
- Admitted in Mathematics.

Papers

Published

A Spectral Analysis of Dot-product Kernels, Meyer Scetbon, Zaid Harchaoui, in *Proceedings of the* 24^{th} *International Conference on Artificial Intelligence and Statistics (AISTATS),* 2021.

Equitable and Optimal Transport with Multiple Agents, Meyer Scetbon*, Laurent Meunier*, Jamal Atif, Marco Cuturi, in *Proceedings of the* 24^{th} *International Conference on Artificial Intelligence and Statistics (AISTATS),* 2021.

Linear Time Sinkhorn Divergences using Positive Features, Meyer Scetbon, Marco Cuturi, in *Advances in Neural Information Processing Systems* 33 *(NeurIPS),* 2020.

Harmonic Decompositions of Convolutional Networks , Meyer Scetbon, Zaid Harchaoui, in *Proceedings of the* 37^{th} *International Conference on Machine Learning (ICML),* 2020.

Comparing distributions: l1 geometry improves kernel two-sample testing, Meyer Scetbon, Gaël Varoquaux, **Spotlight** in *Advances in Neural Information Processing Systems* 32 *(NeurIPS),* 2019.

Working papers

Low-Rank Sinkhorn Factorization, Meyer Scetbon, Marco Cuturi, Gabriel Peyré, *Manuscript available at arXiv: 2102.06905,* 2021.

Mixed Nash Equilibria in the Adversarial Examples Game, Laurent Meunier*, Meyer Scetbon*, Rafael Pinot, Jamal Atif, Yann Chevaleyre, *Manuscript available at arXiv:2103.04737,* 2021.

Deep K-SVD Denoising, Meyer Scetbon, Michael Elad, Peyman Milanfar, *Manuscript available at arXiv:1909.13164,* 2020.

Software

2020 **LinearSinkhorn**, Main contributor, `https://github.com/meyerscetbon/LinearSinkhorn`.

2020 **Deep KSVD**, Main contributor, `https://github.com/meyerscetbon/Deep-K-SVD`.

2019 **l1 two sample test**, Main contributor, `https://github.com/meyerscetbon/l1_two_sample_test`.

Teaching Assistant

Spring 2021 **Optimal Transport: theory, computations, statistics and ML**, *ENSAE*, Paris.
Introduction to the theory of Optimal Transport and its various recent tools developed for applications in machine learning. 40 students.

2020–2021 **Optimization**, *ENSAE*, Paris.
Presentation of the processes for formalising an optimization problem and its useful techniques for econometrics, statistics and machine learning. 25 students.

2020–2021 **Probability Theory**, *ENSAE*, Paris.
Introduction to the fundamental concepts in the probability calculus. Conditional and convergence laws are studied in detail. 25 students.

Automn 2020 **Introduction to stochastic processes**, *ENSAE*, Paris.
This course is an introduction to discrete-time martingales and Markov chains and their applications in statistics. 25 students.

Academic service

Conference Reviewer — Neural Information Processing Systems 2020, International Conference on Machine Learning 2021, International Conference on Artificial Intelligence and Statistics 2021

Journal Reviewer — Journal of Machine Learning Research, Bernoulli Journal, IEEE Transactions on Pattern Analysis and Machine Intelligence

Work Experiences

Autumn 2019 **Visit at the University of Washington**, *Seattle.*
Optimal learning rates for Deep Networks on the sphere.

Spring 2019 **Research internship at Technion**, *Haifa.*
Sparse coding and Dictionary learning adapted to deep architectures.

Winter 2019 **Research internship at the University of Washington**, *Seattle.*
Learning theory of Deep Neural Networks.

Spring 2018 **Research internship at the French Institute for Research in Computer Science and Automation (Inria)**, *Paris.*
Adapting kernel two-sample testing to the l1 geometry.

Spring 2017 **Intern, Marex Solutions**, *London.*
Quantitative analyst intern.

Spring 2017 **Scientific project of introduction to research at the Center of Mathematics and Applications (CMLA)**, *Paris.*
Bundle adjustment problem in computer vision.

Languages and Skills

- **Language**
  French (mother tongue), English(fluent), Spanish (working knowledge).
- **Computer skills**
  Python, R, Matlab, Latex, Excel, VBA.

Outside Interests

Sport Boxing (Amateur), Soccer (Amateur), Swimming (Amateur), Fitness.

Hobbies Travel (USA, Spain, Israel, England, Italy), Chess, Theatre .