Clément Bonet

Curriculum Vitae

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clbonet

Positions

2023 – 2025

Postdoctoral researcher, *ENSAE, CREST*, Palaiseau, France
I am working with Anna Korba on Optimal Transport and sampling.

Education

2020 – 2023

Laboratoire de Mathématiques de Bretagne Atlantique (LMBA), PhD, *Université Bretagne Sud*, Vannes, Bretagne, France
Title: Leveraging Optimal Transport via Projections on Subspaces for Machine Learning Applications
Supervisors: François Septier (Université Bretagne Sud), Nicolas Courty (Université Bretagne Sud) and Lucas Drumetz (IMT Atlantique).
Reviewers: Gabriel Peyré (ENS), Gabriele Steidl (Technische Universität Berlin)
President of the jury: Julie Delon (Université Paris Cité)
Jury: Frank Nielsen (Sony), David Alvarez-Melis (Harvard), Rémi Flamary (Ecole Polytechnique)

2019 – 2020

Ecole Normale Supérieure Paris-Saclay, Master 2 MVA (Mathematics, Machine Learning and Computer Vision), Cachan, France.
Convex Optimization, Computational Statistic, Probabilistic Graphical Model, Deep Learning, Kernel Methods, Bayesian Machine Learning. High Honors.

2017 – 2020

Télécom Paris, Paris, France
Majors: Data Science, Random Modelization and Scientific Computing.

Publications

* denotes equal contribution

[1] Clément Bonet, Lucas Drumetz, and Nicolas Courty. "Sliced-Wasserstein Distances and Flows on Cartan-Hadamard Manifolds". In: *Accepted with minor revision at Journal of Machine Learning Research (**JMLR**)* (**2025**).

[2] Clément Bonet, Théo Uscidda, Adam David, Pierre-Cyril Aubin-Frankowski, and Anna Korba. "Mirror and Preconditioned Gradient Descent in Wasserstein Space". In: ***Spotlight** in Advances in Neural Information Processing Systems (**NeurIPS**)*. **2024**.

[3] Clément Bonet*, Kimia Nadjahi*, Thibault Séjourné*, Kilian Fatras, and Nicolas Courty. "Slicing Unbalanced Optimal Transport". In: *Transactions on Machine Learning Research (**TMLR**)* (**2024**).

[4] Guillaume Mahey, Laetitia Chapel, Gilles Gasso, Clément Bonet, and Nicolas Courty. "Fast Optimal Transport through Sliced Wasserstein Generalized Geodesics". In: ***Spotlight** in Advances in Neural Information Processing Systems (**NeurIPS**)*. **2023**.

[5] Clément Bonet*, Benoît Malézieux*, Alain Rakotomamonjy, Lucas Drumetz, Thomas Moreau, Matthieu Kowalski, and Nicolas Courty. "Sliced-Wasserstein on Symmetric Positive Definite Matrices for M/EEG

Signals". In: *Proceedings of the 40th International Conference on Machine Learning (**ICML**)*. vol. 202. Proceedings of Machine Learning Research. PMLR, **2023**, pp. 2777–2805.

[6] Clément Bonet, Laetitia Chapel, Lucas Drumetz, and Nicolas Courty. "Hyperbolic Sliced-Wasserstein via Geodesic and Horospherical Projections". In: *Proceedings of 2nd Annual Workshop on Topology, Algebra, and Geometry in Machine Learning (**TAG-ML**)*. vol. 221. Proceedings of Machine Learning Research. PMLR, **2023**, pp. 334–370.

[7] Clément Bonet, Paul Berg, Nicolas Courty, François Septier, Lucas Drumetz, and Minh-Tan Pham. "Spherical Sliced-Wasserstein". In: *International Conference on Learning Representations (**ICLR**)*. **2023**.

[8] Clément Bonet, Nicolas Courty, François Septier, and Lucas Drumetz. "Efficient Gradient Flows in Sliced-Wasserstein Space". In: *Transactions on Machine Learning Research (**TMLR**)* (**2022**).

[9] Clément Bonet, Titouan Vayer, Nicolas Courty, François Septier, and Lucas Drumetz. "Subspace Detours Meet Gromov–Wasserstein". In: *Algorithms* 14.12 (**2021**), p. 366.

Preprints

[10] Jonathan Geuter, Clément Bonet, Anna Korba, and David Alvarez-Melis. *DDEQs: Distributional Deep Equilibrium Models through Wasserstein Gradient Flows*. Submitted to AISTATS. **2024**.

Other Research Experiences

Reviews — I have reviewed at different journals/conferences: AISTATS 2022, 2023, 2025, ICML 2022, 2023, 2024 (Outstanding Reviewer in 2022), Neurips 2022, 2023, 2024, ICLR 2024, 2025, TMLR since 2024, JMLR.

Open source — Contributor to the Python Optimal Transport library: `https://pythonot.github.io`.

Talks

20/12/2024 — Mokameeting, Inria Paris.

05/12/2024 — NeurIPS in Paris.

03/12/2024 — OCKHAM Seminar, Inria Lyon.

05/08/2024 — Level Set meeting, UCLA.

28/02/2024 — SIAM Conference on Uncertainty Quantification (UQ24).

22/01/2024 — Groupe de Travail (GdT) OT-PDE-ML, Institut de Mathématique d'Orsay.

08/01/2024 — CREST Seminar, ENSAE.

03/07/2023 — Conférence sur l'Apprentissage Automatique (CAp) 2023, Strasbourg.

06/10/2022 — Team Seminar, IRISA.

07/06/2022 — Laboratory Seminar, LMBA.

13/12/2021 — Spotlight poster at the Neurips Workshop Optimal Transport and Machine Learning (OTML).

19/11/2021 — Team Seminar of Dynamical Systems, Probabilities and Statistics, LMBA.

18/11/2021 — Groupement de Recherche (GDR), Information Signal Image Vision (ISIS), Optimal Transport and Machine Learning (OTML), Institut Henri Poincaré.

24/09/2021 — Team seminar, IRISA.

Professional Experiences

Teaching Assistant

2024 **Optimal Transport (M2)**, *ENSAE*, Palaiseau, France

2023 **Regression Model (L3)**, *Université Bretagne Sud*, Vannes, France

2022 **Linear Regression and Simulation Methods (L3)**, *Université Bretagne Sud*, Vannes, France

2021 **Mathematic Statistics (L3)**, *Université Bretagne Sud*, Vannes, France

Internships

2020 **Research Internship**, *MAP5*, Paris, France
Supervisors: Raphaël Lachièze-Rey, Pierre Latouche and Antoine Marchina.

Study of a subsampling algorithm using Gaussian Random Fields (`https://github.com/clbonet/Internship-MVA`).

2019 **Data Analyst Internship**, *Sodexo Benefits & Rewards Services*, Ixelles, Bruxelles

Establishment analysis of VISA and MasterCard reimbursement data as part of the replacement affiliate scholarship.

2018 **Web Development Internship**, *ZenyWay*, Paris, France

I developed the frontend interface of ZenyPass, a password manager.

Languages

French	Native Speaker	★★★★★
English	623/677 TOEFL ITP (Januarly 2019)	★★★★☆
German	Abitur in 2015	★★☆☆☆

Skills

Programming	Python ★★★★☆, LateX ★★★☆☆	
Basic	R, Java, C, C++, SQL, HTML, CSS, Javascript.	
Data Science	Scikit-learn, Pytorch, Jax	
Tools	Git	*Program Version Control and Program Repositories.*
OS	Linux	*Daily use.*