# Clément Bonet

## Curriculum Vitae

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🖥 https://clbonet.github.io
in clement-bonet-2840a9153
● 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] Jonathan Geuter, Clément Bonet, Anna Korba, and David Alvarez-Melis. "DDEQs: Distributional Deep Equilibrium Models through Wasserstein Gradient Flows". In: *International Conference on Artificial Intelligence and Statistics (**AISTATS**)*. **2025**.

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

[3] 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**.

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

[5] 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**.

[6] 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.

[7] 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.

[8] 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**.

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

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

## Preprints

[11] Clément Bonet*, Christophe Vauthier*, and Anna Korba. *Flowing Datasets with Wasserstein over Wasserstein Gradient Flows*. **2025**

## 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

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|---|---|
| 10/02/2025 | GT CalVa, Université Paris Dauphine. |
| 17/01/2025 | GdT Image, MAP5. |
| 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
2025
2023
2022
2021

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

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

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

**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

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

# Skills

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|---|---|
| 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.* |