Kimia Nadjahi

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Research Experience

CNRS and ENS (Paris, France) Feb. 2024 – ongoing
Research faculty (permanent position)

CNRS researcher affiliated to the Computer Science department of ENS Paris

Massachusetts Institute of Technology (MIT) (Cambridge, USA) Dec. 2022 – Jan. 2024
Postdoctoral Fellowship Program for Engineering Excellence

Distinguished postdoctoral fellow in the Geometric Data Processing group, Computer Science and Artificial Intelligence Laboratory (CSAIL), MIT Department of Electrical Engineering and Computer Science. Supervised by Justin Solomon

Sorbonne University (Paris, France) Dec. 2021 – Dec. 2022
Postdoctoral Fellowship

Postdoctoral fellow within the *Laboratoire de Probabilités, Statistique et Modélisation* (LPSM). Supervised by Julie Josse and Claire Boyer

Microsoft Research Lab (Montréal, Canada) April 2018 – Aug. 2018
Internship

Research intern within the Reinforcement Learning team. Supervised by Romain Laroche and Rémi Tachet des Combes

RIKEN Center for Advanced Intelligence Project (Tokyo, Japan) April 2017 – Sept. 2017
Internship

Research intern within the Approximate Bayesian Inference team. Supervised by Emtiyaz Khan

Education

Télécom Paris (Institut Polytechnique de Paris, France) Oct. 2018 – Nov. 2021
PhD degree

- Supervised by Roland Badeau, Alain Durmus and Umut Şimşekli
- Title: "Sliced-Wasserstein distance for large-scale machine learning: theory, methodology and extensions"
- Keywords: computational optimal transport, approximate inference, deep generative modeling, large/high-dimensional data

ENS Cachan (Cachan, France) Sept. 2016 – Sept. 2017
MSc in Machine Learning and Computer Vision (MVA)

Master's thesis: "Generalized matrix factorization using conjugate-computation variational inference"

Ensimag (Institut Polytechnique de Grenoble, France) Sept. 2013 – Aug. 2016
Engineer's degree in Computer Science and Applied Mathematics

Lycée Saint-Louis (Paris, France) Sept. 2011 – Aug. 2013
CPGE MPSI-MP

Publications

Journal Papers

[1] C. Bonet*, **K. Nadjahi***, T. Séjourné*, K. Fatras, N. Courty. *Slicing Unbalanced Optimal Transport.* Transactions on Machine Learning Research (TMLR), January 2025.

Preprints

[2] V. Castin, **K. Nadjahi**, P. Ablin, G. Peyré. *Balanced LoRA: Removing Parameter Invariance to Accelerate Convergence.* 2026 (submitted)

[3] G. Thurin, **K. Nadjahi**, C. Boyer. *Convergence Rates for Distribution Matching with Sliced Optimal Transport.* 2026 (submitted)

Proceedings of International Conferences

[4] M. Sefidgaran, **K. Nadjahi**, A. Zaidi. *Tighter CMI-Based Generalization Bounds via Projection and Quantization.* NeurIPS 2025. **Accepted as an oral** (≈ **0.36% of all submissions**: 77 orals out of 21 575 submissions)

[5] G. Thurin, **K. Nadjahi**, C. Boyer. *Optimal Transport-based Conformal Prediction.* ICML 2025

[6] J. Zhu, K. Greenewald, **K. Nadjahi**, H. Sáez de Ocáriz Borde, R. Brüel Gabrielsson, L. Choshen, M. Ghassemi, M. Yurochkin, J. Solomon. *Asymmetry in Low-Rank Adapters of Foundation Models.* ICML 2024

[7] **K. Nadjahi**, K. Greenewald, R. Brüel Gabrielsson, J. Solomon. *Slicing Mutual Information Generalization Bounds for Neural Networks.* ICML 2024

[8] A. Rakotomamonjy, **K. Nadjahi**, L. Ralaivola. *Federated Wasserstein Distance.* ICLR 2024.

[9] R. Ohana*, **K. Nadjahi***, A. Rakotomamonjy, L. Ralaivola. *Shedding a PAC-Bayesian Light on Adaptive Sliced-Wasserstein Distances.* ICML 2023.

[10] S. Kolouri, **K. Nadjahi**, S. Shahrampour, U. Şimşekli. *Generalized Sliced Probability Metrics.* IEEE ICASSP 2022.

[11] **K. Nadjahi**, A. Durmus, P. E. Jacob, R. Badeau, U. Şimşekli. *Fast Approximation of the Sliced-Wasserstein Distance Using Concentration of Random Projections.* NeurIPS 2021.

[12] **K. Nadjahi**, A. Durmus, L. Chizat, S. Kolouri, S. Shahrampour, U. Şimşekli. *Statistical and Topological Properties of Sliced Probability Divergences.* NeurIPS 2020. **Accepted as a spotlight presentation** (≈ **3% of all submissions**: 280 spotlights out of 9454 submissions)

[13] **K. Nadjahi**, V. De Bortoli, A. Durmus, R. Badeau, U. Şimşekli. *Approximate Bayesian Computation with the Sliced-Wasserstein Distance.* IEEE ICASSP 2020.

[14] **K. Nadjahi**, A. Durmus, U. Şimşekli, R. Badeau. *Asymptotic Guarantees for Learning Generative Models with the Sliced-Wasserstein Distance.* NeurIPS 2019. **Accepted as a spotlight presentation** (≈ **2.5% of all submissions**: 164 spotlights out of 6743 submissions)

[15] S. Kolouri*, **K. Nadjahi***, U. Şimşekli, R. Badeau, G. K. Rohde. *Generalized Sliced Wasserstein Distances.* NeurIPS 2019.

[16] **K. Nadjahi***, R. Laroche*, R. Tachet des Combes. *Safe Policy Improvement with Soft Baseline Bootstrapping.* ECML-PKDD 2019.

Workshops

[17] Neural Compression workshop at ICML 2023 (Honolulu, Hawaii). **Contributed talk**, *"Slicing Mutual Information Generalization Bounds for Neural Networks"*

[18] WiML workshop at NeurIPS 2019 (Vancouver, Canada). **Contributed talk** (8 contributed talks selected among ≈ 600 submissions), *"Asymptotic Guarantees for Learning Generative Models with the Sliced-Wasserstein Distance"*

[19] European workshop on Reinforcement Learning 2018 (Lille, France). *"Soft Safe Policy Improvement with Baseline Bootstrapping"*

[20] Safety, Risk and Uncertainty in Reinforcement Learning workshop at UAI 2018 (Monterey, USA). *"Soft Safe Policy Improvement with Baseline Bootstrapping"*

Awards and Grants

MIT School of Engineering Postdoctoral Fellowship for Engineering Excellence (Annual stipend of \$75 000 and additional funds of \$10 000 for conference travel and research expenses)

Best Paper Award at Neural Compression workshop (ICML 2023) for [17]

IP Paris Best Thesis Award 2022, First Prize (€3000 prize)

Best Paper Award at IEEE ICASSP 2022 for publication [10] (\$1500 prize)

Best Reviewer (Top 10%) for ICML 2021, awarded free registration to the conference

Best Student Paper Award at IEEE ICASSP 2020 for publication [13] (€1000 prize)

Top 10% of high-scoring reviewers for NeurIPS 2020, awarded free registration to the conference

Travel grant (\$1120) by Women in Machine Learning to present publication [14] at WiML Workshop 2019 (Vancouver, Canada)

Travel grant (\$1400) by NeurIPS to present publication [14] at NeurIPS 2019 (Vancouver, Canada)

Teaching Experience

PSL University Sept. 2024 – ongoing
Part-time lecturer

- Advanced Topics in Machine Learning (PSL University, Year 2 of Master's degree in Artificial Intelligence, Systems, Data (IASD)): 9h
- Introduction to Deep Learning (Paris Dauphine University, Year 2 of Double Bachelor's degree in Artificial Intelligence and Organizational Sciences): 39h
- Introduction to Machine Learning (ENS Paris, Year 3 of Bachelor's degree in Computer Science): 7.5h
- Optimization & Machine Learning (PSL University, Training for Academics): 18h

Télécom Paris Oct. 2018 – Oct. 2021
Teaching assistant

- Basic Algebra, Basic Analysis, Analysis and Probability (MDI111–114, Bachelor): 12h
- Factorization-Based Data Analysis (DK917, Master): 9h
- Introduction to Graphical Models (DATA905, Master): 7h
- Optimization for Machine Learning (SD-TSIA211, Master): 18h
- Statistics: Linear models (SD-TSIA204, Master): 9h
- Statistics, Machine Learning and Linear Models (MDI720, Executive Master): 12h
- Time series, part 2 (TSIA202b, Master): 15h

Services

Jury member of PhD defenses (2025: Eloi Tanguy, Siwan Boufadène; 2024: Guillaume Mahey)

Member of hiring committee for assistant professor positions (Ecole Polytechnique, Sorbonne University), 2026

Supervision: Gauthier Thurin (postdoc since 2024), Samuel Boïté (PhD student since 2025, co-supervised with Julie Delon)

Co-organizer of the workshop *Learning and optimization in Luminy 2026* at CIRM (*Centre International de Rencontres Mathématiques*)

Jury member for the Gilles Kahn PhD award of SIF (*Société Informatique de France*), 2025 – 2028

Member of hiring committee for AI Fellows at PSL University, 2024

Organizer of the mini-symposium *Optimal Transport and Applications* at CANUM 2024

Student Program and Funding Chair of WiML Workshop at NeurIPS 2022

Mentor at NeurIPS@Paris 2022

Reviewer for AISTATS (2020 – now), NeurIPS (2020 – now), ICML (2021 – now), JMLR, TMLR

Expert reviewer for ICML 2021

Selected Invited Talks

Optimal transport and generative models, GRETSI summer school (Peyresq, France), June 2026

Flows on Measure Spaces and Applications in Machine Learning, Oberwolfach Research Institute for Mathematics (MFO), March 2026

EPFL Statistics seminars, Ecole polytechnique fédérale de Lausanne (Lausanne, Switzerland), November 2025

Seminar at Machine Learning Genoa Center (MaLGa), University of Genoa (Genoa, Italy), November 2025

Imaging in Paris Seminar, Institut Henri Poincaré (Paris, France), November 2025

Invited lecture at Harvard University (Cambridge, USA) in the course *CS 2840: Computational Optimal Transport for Machine Learning* (undergraduate/graduate level), October 2025

Lausanne Event on Machine Learning and Neural Network Theory (Leman-Th 2025) at EPFL (Lausanne, Switzerland), May 2025

Mathematics and Image Analysis (MIA'25) at Institute Henri Poincaré (Paris, France), January 2025

Optimization meets Statistics session at IMS International Conference on Statistics and Data Science (ICSDS) (Nice, France), December 2024

Optimal Transportation and Applications workshop at Centro di Ricerca Matematica Ennio De Giorgi (Pisa, Italy), December 2024

PGMODays 2024 at EDF Lab Paris-Saclay (France), November 2024

GT CalVa (Calculus of Variations seminar), Université Paris-Cité, November 2024

Learning and Optimization in Luminy workshop at CIRM (Marseille, France), June 2024

Optimal Transport: Theory and Applications workshop at Institut d'Etudes Scientifiques de Cargèse (France), April 2024

HeKA team seminar, Inria Paris, November 2022

Mokaplan team seminar, Inria Paris, November 2022

MIND team seminar, Inria Saclay, July 2022

Statistical and Geometric Divergences for Machine Learning Research School, Mathematical Center Henri Lebesgue (Rennes, France), June 2022

Journées de Statistique de la SFdS, annual conference organized by the French Statistical Society (Lyon, France), June 2022

Optimal Transport and Statistical Learning workshop by GDR ISIS-MIA, Institut Henri Poincaré (Paris, France), November 2021

Causal Inference and Missing Data Group team seminar, Inria, June 2021

SIERRA team seminar, ENS/Inria Paris, March 2021

Paris Machine Learning Meetup, December 2020

OxCSML team seminar, University of Oxford, May 2020

Data Science & AI for Digitalized Industry & Services Chair seminar, Télécom Paris, September 2019

Skills

Programming

- Python (advanced use), C/C++, Java, Matlab, R.
- Open-source code available at https://github.com/kimiandj/

Languages

French (native), English (fluent, TOEIC 955/990), Spanish (conversant), Persian (reading, conversant)