AUSTIN J. STROMME

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ACADEMIC POSITIONS

Institut Polytechnique de Paris — 2023-Present
Statistics Department of ENSAE Paris/CREST
Assistant Professor (tenure track)

EDUCATION

Massachusetts Institute of Technology — 2023
Ph.D. in Electrical Engineering and Computer Science
Thesis: *Statistical Aspects of Optimal Transport*
Advisors: Philippe Rigollet (primary) and Guy Bresler

Massachusetts Institute of Technology — 2020
M.S. in Electrical Engineering and Computer Science
Thesis: *Wasserstein Barycenters: Statistics and Optimization*

University of Washington — 2018
B.S. in Math, B.S. in Computer Science

VISITING POSITIONS

Brown University — 2024-2025
Division of Applied Mathematics
IBM Visiting Professor

Simons Institute for the Theory of Computing — Fall 2021
Program on Geometric Methods in Optimization and Sampling
Visiting Graduate Student

PUBLICATIONS

Manuscripts.

M1. On the implicit regularization of Langevin dynamics with projected noise
Govind Menon, Austin J. Stromme, Adrien Vacher
arXiv preprint 2026

Journal papers.

J1. The asymptotic log-Sobolev constant equals the Polyak-Łojasiewicz constant
Sinho Chewi, Austin J. Stromme
Annales de l'Institut Henri Poincaré (B): Probabilités et Statistiques *to appear*

J2. On the sample complexity of entropic optimal transport
Philippe Rigollet, Austin J. Stromme
Annals of Statistics 2025

J3. Fast convergence of empirical barycenters in Alexandrov spaces and the Wasserstein space
Thibaut Le Gouic, Quentin Paris, Philippe Rigollet, Austin J. Stromme
Journal of the European Math Society (JEMS) 2022

J4. Asymptotics for semi-discrete entropic optimal transport
Jason M. Altschuler, Jon Niles-Weed, Austin J. Stromme

SIAM Journal on Mathematical Analysis (SIMA) 2022

J5. Algebraic Properties of Generalized Graph Laplacians
David Jekel, Avi Levy, Will Dana, Austin Stromme, Collin Litterell
SIAM Journal of Discrete Math (SIDMA) 2018

J6. Frog Model Wakeup Time on the Complete Graph
Nikki Carter, Brittany Dygert, Stephen Lacina, Collin Litterell, Austin Stromme, Andrew You
Rose-Hulman Undergraduate Math Journal 2016

Conference papers.

C1. Provable convergence and limitations of geometric tempering for Langevin dynamics
Omar Chehab, Anna Korba, Austin J. Stromme, Adrien Vacher
International Conference on Learning Representations (ICLR) 2025

C2. Minimum intrinsic dimension scaling for entropic optimal transport
Austin J. Stromme
International Conference on Soft Methods in Probability and Statistics 2024, **Best paper award**

C3. Sampling from a Schrödinger bridge
Austin J. Stromme
Artificial Intelligence and Statistics (AISTATS) 2023

C4. Averaging on the Bures-Wasserstein manifold: dimension-free convergence of gradient descent
Jason M. Altschuler, Sinho Chewi, Patrik Gerber, Austin J. Stromme
Neural Information Processing Systems (NeurIPS) 2021, **Selected for spotlight**

C5. Fast and Smooth Interpolation on Wasserstein Space
Sinho Chewi, Julien Clancy, Thibaut Le Gouic, Philippe Rigollet, George Stepaniants, Austin J. Stromme
Artificial Intelligence and Statistics (AISTATS) 2021

C6. Exponential ergodicity of mirror-Langevin diffusions
Sinho Chewi, Thibaut Le Gouic, Chen Lu, Tyler Maunu, Philippe Rigollet, Austin J. Stromme
Neural Information Processing Systems (NeurIPS) 2020

C7. Gradient descent algorithms for Bures-Wasserstein barycenters
Sinho Chewi, Tyler Maunu, Philippe Rigollet, Austin J. Stromme
Conference on Learning Theory (COLT) 2020

TALKS

- Conference on Mathematical Foundations of AI, Universidad Nacional Autónoma de México (UNAM), Mexico City, Mexico, April 2026. *On the implicit regularization of Langevin dynamics with projected noise*
- CERMICS Lab Applied Math Seminar, École des Ponts, Champs-Sur-Marne, France, February 2026. *On the implicit regularization of Langevin dynamics with projected noise*
- Group Meeting of Prof. Niao He, ETH Zurich, Zurich, Switzerland, November 2025. *On the implicit regularization of Langevin dynamics with projected noise*
- Workshop on Particles, Flows, and Maps: Modern Approaches for Sampling Complex Distributions, Bernoulli Center (EPFL), Lausanne, Switzerland, November 2025. *On the implicit regularization of Langevin dynamics with projected noise*
- 2025 International Conference on Stochastic Programming, Marne-La-Vallée, France, July 2025. *Asymptotic log-Sobolev constants and the Polyak-Łojasiewicz gradient domination condition*

- Workshop on Wasserstein Gradient Flows in Math and Machine Learning, Banff International Research Station, Banff, Canada, July 2025. *Asymptotic log-Sobolev constants and the Polyak-Łojasiewicz gradient domination condition*
- Statistics Seminar, ENSAE / CREST, Palaiseau, France, April 2025. *Asymptotic log-Sobolev constants and the Polyak-Łojasiewicz gradient domination condition*
- Séminaire de probabilités et mathématiques financières, Évry Cedex, France, March 2025. *Asymptotic log-Sobolev constants and the Polyak-Łojasiewicz gradient domination condition*
- PGMO Days, Paliseau, France, November 2024. *Asymptotic log-Sobolev constants and the Polyak-Łojasiewicz gradient domination condition*
- Séminaire Parisien d'Optimization, Paris, France, November 2024. *Asymptotic log-Sobolev constants and the Polyak-Łojasiewicz gradient domination condition*
- LCDS Seminar, Brown Unversity, Providence, United States, September 2024. *New statistical phenomena for entropic optimal transport*
- Soft Methods in Probability and Statistics Conference, Salzburg, Austria, September 2024. *Minimum intrinsic dimension scaling for entropic optimal transport*
- Seminar on Mathematical Stochastics, Göttingen University, Göttingen, Germany, July 2024. *Minimum intrinsic dimension scaling for entropic optimal transport*
- Workshop on Optimal Transport, Institut d'Études Scientifiques de Cargèse, Cargèse, France, April 2024. *Minimum intrinsic dimension scaling for entropic optimal transport*
- Working Group on Optimal Transport, Institut de Mathématique d'Orsay, Orsay, France, March 2024. *Minimum intrinsic dimension scaling for entropic optimal transport*
- Le Séminaire Palaisien, Palaiseau, France, March 2024. *Minimum intrinsic dimension scaling for entropic optimal transport*
- Mathematics of Data Workshop, Institute for Mathematical Sciences, Singapore, January 2024. *New statistical phenomena for entropic optimal transport*
- Workshop on Statistics in Metric Spaces, ENSAE/CREST, Palaiseau, France, October 2023. *Global, dimension-free convergence of first-order methods for Bures-Wasserstein barycenters*
- Flair Seminar, EPFL, Lausanne, Switzerland, April 2023. *New statistical phenomena for entropic optimal transport*
- LIDS Student Conference, MIT, Boston, United States, February 2023. *On the sample complexity of entropic optimal transport*
- Optimization Working Group, Simons Institute Semester on Geometric Methods in Optimization and Sampling, United States, September 2021. *The Bures-Wasserstein geometry on positive-definite matrices*
- MLxMIT student seminar, MIT, United States, July 2020. *Gradient descent algorithms for Bures-Wasserstein barycenters*

TEACHING EXPERIENCE

ENSAE, Department of Statistics
Lecturer, Advanced Machine Learning — Fall 2023, Fall 2024, Fall 2025
Lecturer, Statistical Optimal Transport — Spring 2024, Spring 2025

Massachusetts Institute of Technology, Department of EECS
Teaching assistant, Non-asymptotic Statistics — Spring 2023

University of Washington
Volunteer instructor, Math Circle (math enrichment for middle schoolers) — 2014-2018

University of Washington, Mathematics Department
Teaching assistant, Honors Accelerated Advanced Calculus — Fall 2015-Spring 2016

Cascadia Community College
Math Tutor — Fall 2013-Spring 2014

ADVISING AND MENTORING

- Arthur Stephanovitch (postdoc) — 2025-Present
- Adrien Vacher (postdoc, joint with Anna Korba) — 2025-Present
- Yassine Boukhateb (PhD student, joint with Victor-Emmanuel Brunel) — 2025-Present
- Sasidhar Kunapuli (high school student) — 2025-2026

SERVICE

- Reviewer for Conference on Learning Theory (COLT), International Conference on Artificial Intelligence and Statistics (AISTATS), International Conference on Learning Representations (ICLR), International Conference on Machine Learning (ICML), Neural Information Processing Systems (NeurIPS), Annals of Applied Probability, Annals of Statistics, Bernoulli, Electronic Journal of Statistics, ESAIM: Mathematical Modelling and Numerical Analysis, Information and Inference, Probability Theory and Related Fields, Stochastic Processes and their Applications
- Co-organizer of Online Seminar in Statistics and Geometry, 2024-present

ACADEMIC AWARDS

- Best Paper Award, Conference on Soft Methods in Probability and Statistics, Salzburg, Austria, 2024
- Best talk award, 2023 MIT LIDS Student Conference
- NDSEG Graduate Research Fellowship 2019-2022
- NSF Graduate Fellowship 2019 (declined)
- Graduated *cum laude* from University of Washington 2018
- Goldwater scholarship 2016

LANGUAGES

- English: Native
- French: Upper intermediate (passed DELF B2 12/2024)
- standard Mandarin: Lower intermediate