

AUSTIN J. STROMME

RESEARCH INTERESTS

Optimal transport, Riemannian optimization, and high-dimensional statistics. Specifically, geometry of optimal transport, barycenters, manifold geometries on positive-definite matrices, entropic regularization, statistical un-regularized and regularized optimal transport, Schrödinger bridge.

EMPLOYMENT

Institut polytechnique de Paris **October 2023-Present**
Statistics Department of ENSAE/CREST
Assistant Professor

EDUCATION

Massachusetts Institute of Technology **September 2023**
Ph.D. in Electrical Engineering and Computer Science
Thesis: *Statistical Aspects of Optimal Transport*
Advisor: Philippe Rigollet

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

University of Washington **March 2018**
B.S. in Math, B.S. in Computer Science, GPA: 3.86/4.0

MANUSCRIPTS

- M1. Minimum intrinsic dimension scaling for entropic optimal transport
Austin J. Stromme
arXiv preprint 2023
- M2. On the sample complexity of entropic optimal transport
Philippe Rigollet, Austin J. Stromme
arXiv preprint 2022

JOURNAL PAPERS

- J1. 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
- J2. Asymptotics for semi-discrete entropic optimal transport
Jason M. Altschuler, Jon Niles-Weed, Austin J. Stromme
SIAM Journal on Mathematical Analysis (SIMA) 2022
- J3. Algebraic Properties of Generalized Graph Laplacians
David Jekel, Avi Levy, Will Dana, Austin Stromme, Collin Litterell
SIAM Journal of Discrete Math (SIDMA) 2018
- J4. 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. Sampling from a Schrödinger bridge
Austin J. Stromme
Artificial Intelligence and Statistics (AISTATS) 2023
- C2. 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
- C3. 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
- C4. 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
- C5. Gradient descent algorithms for Bures-Wasserstein barycenters
Sinho Chewi, Tyler Maunu, Philippe Rigollet, Austin J. Stromme
Conference on Learning Theory (COLT) 2020

TALKS

- EPFL FLAIR Seminar, April 2023, *New statistical phenomena for entropic optimal transport*
- MIT LIDS Student Conference, February 2023, *On the sample complexity of entropic optimal transport*
- Simons Institute optimization working group, September 2021, *The Bures-Wasserstein geometry on positive-definite matrices*
- MLxMIT student seminar, July 2020, *Gradient descent algorithms for Bures-Wasserstein barycenters*

SERVICE AND AWARDS

- Reviewer for NeurIPS 2021, ICLR 2022, Information and Inference, Electronic Journal of Statistics, Annals of Statistics
- Best talk award, 2023 MIT LIDS Student Conference
- Spotlight at NeurIPS 2021 (top 3% of submissions)
- NDSEG Graduate Research Fellowship 2019-2022
- NSF Graduate Fellowship 2019 (declined)
- Graduated *cum laude* from University of Washington 2018
- Goldwater scholarship 2016