Martin Rapaport

Curriculum Vitae

Wean Hall 8124, Department of Mathematical Sciences
Carnegie Mellon University, Pittsburgh, USA
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martinrapaport.github.io

Education

2024– **Postdoctoral Researcher**, *Carnegie Mellon University*, Hosted by Prof. Prasad Tetali.

2020–2023 **Ph.D. in Mathematics**, *Université Gustave Eiffel (Paris-Est)*, Supervisors: Paul-Marie Samson and Matthieu Fradelizi.
Thesis: *Entropic curvature on graphs and discrete log-concavity on Z^d.*

2019–2020 **Master 2 in Mathematics and Applications**, *Université Paris Dauphine – PSL*, Paris.
Master thesis: *Entropic curvature on graphs.*

2018–2019 **Master of Science in Mathematical Engineering**, *Faculty of Physical and Mathematical Sciences, Universidad de Chile*, Santiago.
Thesis: *Non-expansive operators and optimal transport: Markov chains with zero discrete Ricci curvature.*

2015–2018 **Bachelor of Science in Mathematical Engineering**, *Faculty of Physical and Mathematical Sciences, Universidad de Chile*, Santiago.
Graduated with highest distinction (7/7).

Research

Research Interests: Convexity · Optimal transport · Discrete Analysis.

With Paul-Marie Samson: *Criteria for entropic curvature on graph spaces*, preprint, arXiv:2303.15874.

With Matthieu Fradelizi and Lampros Gavalakis: *On the monotonicity of discrete entropy for log-concave random vectors on Z^d*, submitted, arXiv:2401.15462.

With Matthieu Fradelizi and Lampros Gavalakis: *Entropic versions of Bergström's and Bonnesen's inequalities*, submitted, arXiv:2501.10309.

Teaching Experience

Carnegie Mellon University (2024–present)
Instructor. Courses: Probability (21-325), Linear Algebra (21-341)

Université Gustave Eiffel (2020–2022)
Teaching Assistant. Courses: Sequences and Series (L2), Statistics (L1), Methodology (L1)

Reading Groups

2020–2021 *Optimal Transport and Applications*

Based on Santambrogio's book *Optimal Transport for Applied Mathematicians.*
Talk presented: *Brunn–Minkowski inequality and optimal transport.*

2022–2023 *Complex Analysis*

Based on Martínez-Avendaño and Rosenthal's *An Introduction to Operators on the Hardy–Hilbert Space*.
Talk presented: *Introduction to Toeplitz operators.*

Seminars

2020–2023 Informal Analysis Seminar, Université Gustave Eiffel

Organizers: Matthieu Fradelizi, Colin Petitjean.
Talks presented: *Entropic curvature in discrete spaces* (Nov. 2022), *Localization in discrete spaces after Lovász* (Nov. 2022).

2020–2023 Convexity, Optimal Transport and Probability Seminar, IHP (Paris)

Organizers: Max Fathi, Nathaël Gozlan, Matthieu Fradelizi.

2020– Functional Analysis Seminar, Sorbonne Université

Organizers: E. Abakoumov, D. Cordero-Erausquin, G. Godefroy, O. Guédon, B. Maurey, G. Pisier.

Workshops

2022 Geometry, Analysis and Convexity (OLE)

Seville, Spain.
Poster presented: *Some criteria for entropic curvature on graphs.*

2022 Phenomena in High Dimension

Institut Henri Poincaré, Paris, France.
Conference on analytic, geometric and probabilistic aspects of high-dimensional phenomena.

Computing

Languages	MATLAB, Python
Tools	LaTeX, Overleaf, GitHub

Languages

Spanish	Native
French	Full professional proficiency
English	Full professional proficiency
Italian	Basic knowledge (currently improving)