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Andrea Ottolini

Current position

2021-2024 **Postdoctoral Scholar**
University of Washington (WA).

Education

2016-2021 **PhD in Mathematics**
Stanford University, Stanford (CA).
Advisor: Persi Diaconis.
Thesis: *Birthday problems and rates of convergence for Gibbs sampling*.

2014–2016 **Master degree in Mathematics (Laurea Magistrale)**
Univeristà degli Studi di Trieste/SISSA, Trieste (Italy).
110/110 cum laude.
Advisor: Alessandro Michelangeli.
Thesis: *Self-adjoint extensions theories and zero-range interaction models*.

2011–2014 **Bachelor degree (Laurea triennale) in Mathematics**
Università degli studi di Milano, Milano (Italy).
110/110 cum laude.

Research interests

I work on probability, mainly motivated by its interplay with other fields such as statistics, combinatorics, and optimal transport. I also work on quantum mechanics and associated problems in operator theory.

Grants and awards.

2023-2025 AMS-Simons Travel Grant

2014-2016 SISSA Scolarship at University of Trieste

September 2014 Winner of the international selection for a 2 years scholarship of the University of Trieste/SISSA Elite master program in mathematics.

2011-2014 INdAM (Istituto Nazionale di Alta Matematica) Scolarship.

September 2011 Winner of the undegraduate fellowship awarded on a national base selection by INdAM.

Preprints

2024 A. Ottolini, Hitting times on the stochastic block model.

2023 A. Ottolini et al, On the image of graph distance matrices. Submitted.

A. Ottolini, S. Steinerberger, Greedy Matching in Optimal Transport with concave cost. Submitted.

2022 B. Gerencsér, A. Ottolini, Cutoff for a class of auto-regressive models with vanishing additive noise. Under revision at the *Scandinavian Journal of Statistics*.

Accepted papers

A. Ottolini, S. Steinerberger, Concentration of Hitting Times in Erdös Rényi graphs. To appear on *Journal of Graph Theory*.

K. Devriendt, A. Ottolini, S. Steinerberger, Graph curvature via resistance distance. To appear on *Discrete Applied Mathematics*.

A. Ottolini, R. Tripathi, Central limit theorem in complete feedback games. To appear on *Journal of Applied Probability.*

2023 J. He, A. Ottolini, Card guessing and the birthday problem for sampling without replacement. *The Annals of Applied Probability 33 (6B), 5208-5232.*

B. Gerencsér, A. Ottolini, Rates of convergence for Gibbs sampling in the analysis of almost exchangeable data. *Stochastic Processes and their Applications, 165:440–464, Nov. 2023.*

A. Ottolini, S. Steinerberger, Guessing cards with complete feedback. *Advances in Applied Mathematics, 150:102569, 2023*

N. A. Caruso, A. Michelangeli, A. Ottolini, On a comparison between absolute and relative self-adjoint extension schemes. *Quaestiones Mathematicae, pages 1–19, 2023*

2021 A. Ottolini, Spectral properties of point interactions with fermionic symmetries. *Mathematical Challenges of Zero-Range Physics: Models, Methods, Rigorous Results, Open Problems. Springer International Publishing, 2021.*

M. Gallone, A. Michelangeli, A. Ottolini, Krein-Visik-Birman self-adjoint extension theory revisited. *Mathematical Challenges of Zero-Range Physics: Models, Methods, Rigorous Results, Open Problems. Springer International Publishing, 2021.*

2020 A. Ottolini, Oscillations for order statistics of some discrete processes. *Journal of Applied Probability 57.3 (2020): 703-719.*

2018 S. Becker, A. Michelangeli, A. Ottolini, Spectral analysis of the 2+1 fermionic trimer with contact interactions. *Mathematical Physics, Analysis and Geometry 21.4 (2018): 35.*

A. Michelangeli, A. Ottolini, R. Scandone, Fractional powers and singular perturbations of quantum differential Hamiltonians *Journal of Mathematical Physics 59.7 (2018).*

A. Michelangeli, A. Ottolini, Multiplicity of self-adjoint realisations of the (2+1)-fermionic model of Ter-Martirosyan-Skornyakov type. *Reports on Mathematical Physics 81.1 (2018): 1-38.*

2017 A. Michelangeli, A. Ottolini, On point interactions realized as Ter-Martirosyan-Skornyakov Hamiltonians. *Reports on mathematical physics 79.2 (2017): 215-260.*

Talks

Feb 2024 Speaker at Probability Seminar, NC State (Raleigh).

Jan 2024 Speaker at Postdoc Seminar, University of Washington (Seattle).

Speaker at JMM (San Francisco).

Nov 2023 Speaker at Probability Seminar, University of Maryland (DC).

Speaker at NEPS (New York).

Speaker at Probability Seminar, University of Washington (Seattle).

Oct 2023 Speaker at Probability Seminar, CUNY (New York).

Speaker at Probability Seminar, University of Lehigh (Betlemme).

Feb 2023 Speaker at Probability Seminar, MIT (Boston).

Speaker at Probability Seminar, University of British Columbia (Vancouver).

Speaker at Probability Seminar, University of Washington (Seattle).

Oct 2022 Speaker at Northwestern Probability Seminar, University of Washington (Seattle).

May 2022 Speaker at Victoria Probability Day, University of Victoria (Victoria).

Feb 2022 Speaker at Probability Seminar, University of Washington (Seattle).

Nov 2021 Speaker at Probability Seminar, Renyi Institute (Budapest).

Mar 2021 Speaker at Seminars in Statistics, Collegio Carlo Alberto (Torino).

Jul 2018 Speaker at Mathematical Challenges of Zero-Range Physics, INDAM (Roma).

Nov 2016 Speaker at Trieste Quantum Days, SISSA (Trieste).

Teaching experience

Spring 2024 Principal Instructor at University of Washington. Math 209, Linear Analysis.

Principal Instructor at University of Washington. Math 395, Multivariate probability.

Fall 2023 Principal Instructor at University of Washington. Math 209, Linear Analysis.

	Principal Instructor at University of Washington. Math 381, Discrete Mathematical modelling.
Summer 2023	Principal Instructor at University of Washington. Math 394, Introduction to probability.
Spring 2023	Principal Instructor at University of Washington. Math 396, Finite Markov Chains.
	Principal Instructor at University of Washington. Math 209, Linear Analysis.
Fall 2022	Principal Instructor at University of Washington. Math 209, Linear Analysis.
Spring 2022	Principal Instructor at University of Washington. Math 209, Linear Analysis.
Winter 2022	Principal Instructor at University of Washington. Math 209, Linear Analysis.
Spring 2021	Course Assistant at Stanford University. Math 159, Discrete probabilistic methods.
Winter 2021	Course Assistant at Stanford University. Math 151, Introduction to Probability Theory.
Fall 2020	Teaching Assistant at Stanford University. Math 53, Ordinary differential equations with linear algebra.
Summer 2020	Principal instructor at Stanford University. Math 53, Ordinary differential equations with linear algebra.
Winter 2020	Course Assistant at Stanford University. Math 131P, Partial differential equations.
Fall 2019	Teaching Assistant at Stanford University. Math 53, Ordinary differential equations with linear algebra.
Summer 2019	Principal instructor at Stanford University. Math 53, Ordinary differential equations with linear algebra.
Winter 2019	Course Assistant at Stanford University. Math 131P, Partial differential equations.
Fall 2018	Teaching Assistant at Stanford University. Math 53, Ordinary differential equations with linear algebra.
Spring 2018	Teaching Assistant at Stanford University. Math 53, Ordinary differential equations with linear algebra.
Winter 2018	Course Assistant at Stanford University. Math 131P, Partial differential equations.
Spring 2017	Course Assistant at Stanford University. Math 171P, Fundamental concepts of analysis.
Fall 2016	Course Assistant at Stanford University. Math 131P, Partial differential equations.

Service

Spring 2023	Supervisor of a WXML project with undergraduate students at University of Washington.
Fall 2022	Supervisor of a WXML project with undergraduate students at University of Washington.
2017-2018	Organizer of Student Probability Seminar at Stanford University.