Andrew Warren

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Employment

Spring 2023 - present	**Postdoctoral Fellow,** Department of Mathematics, University of British Columbia
Fall 2022 - Spring 2023	**CARMIN Visitor (postdoc),** Institut des Hautes Études Scientifiques, Université Paris-Saclay

Education

Carnegie Mellon University *Pittsburgh, PA*
PHD LOGIC, COMPUTATION, AND METHODOLOGY *August 2022*
- Advisor: Prof. Dejan Slepčev

Carnegie Mellon University *Pittsburgh, PA*
MS MATHEMATICAL SCIENCES *May 2019*
- Advisor: Prof. Jeremy Avigad

Reed College *Portland, OR*
BA MATHEMATICS *May 2014*
- Honors thesis advisor: Prof. Thomas Wieting

Other Affiliations

Fall 2022	**Visitor,** Institut Henri Poincaré
Fall 2021	**Visiting Graduate Student,** Simons Institute for the Theory of Computing, UC Berkeley
Fall 2014	**Research Assistant,** Center for Advanced Computing, Reed College
Summer 2010-2012	**Research Assistant,** Centre for Molecular and Materials Science, TRIUMF National Laboratory

Publications

PUBLISHED

Warren, Andrew. Fluctuation bounds for ergodic averages of amenable groups. *Bulletin of the London Mathematical Society*. 2021. arXiv:2107.02403.

SUBMITTED

Warren, Andrew. Ultralimits of Wasserstein spaces and metric measure spaces with Ricci curvature bounded from below. 2023. arXiv:2303.04294.

Warren, Andrew, with Dejan Slepčev. Nonlocal Wasserstein distance: metric and asymptotic properties. 2022. arXiv:2209.08407 .

Warren, Andrew. Wasserstein conditional independence testing. 2021. arXiv:2107.14184.

DRAFTS

Warren, Andrew. Gradient flow structure for a class of nonlocal diffusion equations. 2023. Preprint.

Presentations

CONFERENCE PRESENTATIONS

November 2022. *Basic properties of some nonlocal Wasserstein-type distances.* Invited talk, Discrete Systems and Calculus of Variations: Workshop at the TU Munich Institute for Advanced Study, Garching bei München.

April 2022. *Ultralimits of Wasserstein Spaces and CD(K,∞) Spaces.* Invited talk, Joint Mathematics Meeting of the American Mathematical Society, Seattle.

July 2021. *Wasserstein Conditional Independence Testing.* Contributed poster, Geometry and Topology meets Data Analysis and Machine Learning (GTDAML) 2021.

April 2019. *Fluctuations of Amenable Ergodic Averages.* Contributed talk, Workshop on Dynamical Systems and Related Topics, University of Maryland (College Park).

June 2018, *Uniform Metastability for Ergodic Averages of Amenable Groups.* Contributed poster, Canadian Mathematical Society Summer Meeting, Fredericton, New Brunswick.

Seminar Talks

February 2023. *Gradient flow structure for some nonlocal diffusion equations.* (Invited talk) IST Austria stochastic analysis group seminar, Klosterneuburg, Lower Austria.

December 2022. *Properties of some nonlocal Wasserstein-type distances.* (Invited talk) Optimal transport-PDE-machine learning seminar, Laboratoire de Mathématiques d'Orsay, Université Paris-Saclay, Île-de-France.

March 2022. *Static Mean Field Games.* CMU-SIAM working group seminar, Pittsburgh.

December 2021. *Schrödinger Bridge Generative Models.* CMU statistics and machine learning seminar, Pittsburgh.

November 2021. *Early Control Theory: Wiener and Bellman.* CMU historical machine learning seminar, Pittsburgh.

April 2021. *Natural Gradient Descent.* CMU-SIAM working group seminar, Pittsburgh.

March 2021. *Parametrized Measure Models.* CMU-SIAM working group seminar, Pittsburgh.

December 2020. *Wasserstein Gradient Flows, Chi-squared Divergence, and Stein Variational Gradient Descent.* CMU Center for Nonlinear Analysis working group seminar, Pittsburgh.

November 2020. *An Optimal Control Perspective on Deep Learning.* CMU-SIAM working group seminar, Pittsburgh.

November 2019. *Continuum Approximations for Wide Neural Networks and Gradient Descent.* CMU statistics and machine learning seminar, Pittsburgh.

Teaching Experience

Spring 2022	**The Nature of Reason**, Teaching Assistant	*CMU*
Spring 2021	**Game Theory**, Teaching Assistant	*CMU*
Fall 2020	**Revolutions in Science**, Teaching Assistant	*CMU*
Spring 2020	**Game Theory**, Teaching Assistant	*CMU*
Fall 2018	**Formal Logic**, Teaching Assistant	*CMU*
Spring 2018	**The Nature of Reason**, Teaching Assistant	*CMU*
Fall 2016	**Rationalism and Empiricism**, Teaching Assistant	*CMU*
Spring 2016	**The Nature of Reason**, Teaching Assistant	*CMU*
Summer 2015	**Astrophysics**, *The Summer Science Program*, Lead Teaching Assistant	*Boulder, CO*
Summer 2014	**Astrophysics**, *The Summer Science Program*, Teaching Assistant	*Montecito, CA*
2012-2014	**Reactor Training Program**, *Reed Research Reactor*, Instructor	*Reed*

Service

2022 - present	**Referee**, Nonlinear Analysis
2021 - 2022	**Departmental Diversity, Equity, and Inclusion Committee**, Graduate student co-representative
2019 & 2021	**Admissions Committee of The Summer Science Program**, Application reader for Northern California and NYC Metropolitan Region
2017 - 2019	**Department Colloquium**, Co-organizer