

R. TEAL WITTER

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EDUCATION

NYU Tandon

PhD in Computer Science

Advised by [Lisa Hellerstein](#) and [Christopher Musco](#)

September 2020 - Present

Dean's PhD Fellowship

Middlebury College

BA in Mathematics

BA in Computer Science

February 2017 - May 2020

Summa Cum Laude

[Phi Beta Kappa](#)

RESEARCH INTERESTS

Artificial intelligence for social good, deep learning, and quantum computing

NATIONAL AWARDS

[NSF Graduate Research Fellowship Program](#)

2022-25

[Fulbright Scholar](#) (I declined due to COVID)

2020

[Goldwater Scholar](#)

2019

[Academic All-American](#) (National Speech and Debate Association)

2015

PEER-REVIEWED PUBLICATIONS

Note: As is the tradition in theoretical computer science, authors are ordered alphabetically by last name unless otherwise noted with an asterisk.

Lucas Rosenblatt, R. Teal Witter. [Counterfactual Fairness Is Basically Demographic Parity](#). *AAAI Conference on Artificial Intelligence (AAAI 2023)*.

Lisa Hellerstein, Thomas Lidbetter, R. Teal Witter. [A Local Search Algorithm for the Min-Sum Submodular Cover Problem](#). *International Symposium on Algorithms and Computation (ISAAC 2022)*.

Lisa Hellerstein, Devorah Kletenik, Naifeng Liu, R. Teal Witter. [Adaptivity Gaps for the Stochastic Boolean Function Evaluation Problem](#). *Workshop on Approximation and Online Algorithms (WAOA 2022)*.

Christopher Musco, Indu Ramesh, Johan Ugander, R. Teal Witter. [How to Quantify Polarization in Models of Opinion Dynamics](#). *International Workshop on Mining and Learning with Graphs (MLG 2022)*.

R. Teal Witter. [Backgammon is Hard](#). *International Conference on Combinatorial Optimization and Applications (COCOA 2021)*.

Shelby Kimmel, R. Teal Witter. [A Query-Efficient Quantum Algorithm for Maximum Matching on General Graphs](#). *Algorithms and Data Structures Symposium (WADS 2021)*.

R. Teal Witter, Alex Lyford.* [Applications of Graph Theory and Probability in the Board Game Ticket to Ride](#). *International Conference on the Foundations of Digital Games (FDG 2020)*.

Kai DeLorenzo, Shelby Kimmel, R. Teal Witter. [Applications of the Quantum Algorithm for *st*-Connectivity](#). *Conference on the Theory of Quantum Computation, Communication and Cryptography (TQC 2019)*.

TEACHING

Deep Learning (Middlebury CSCI 1051)

Course Instructor

Winter 2023

Deep Learning (NYU CS-GY 6953)

Course Assistant

Fall 2022, Spring 2023

Algorithmic Machine Learning and Data Science (NYU CS-GY 6763)

Course Assistant

Fall 2021, Spring 2022

Machine Learning (NYU CS-GY 6923)

Course Assistant

Spring 2021, Spring 2023

TALKS

Adaptivity Gaps for the Stochastic Boolean Function Evaluation Problem

Workshop on Approximation and Online Algorithms

September 2022

How to Quantify Polarization in Models of Opinion Dynamics

International Workshop on Mining and Learning with Graphs

August 2022

A Local Search Algorithm for the Min-Sum Submodular Cover Problem

International Symposium on Algorithms and Computation

December 2022

International Symposium on Artificial Intelligence and Mathematics

January 2022

Backgammon is Hard

International Conference on Combinatorial Optimization and Applications

December 2021

A Query-Efficient Quantum Algorithm for Maximum Matching on General Graphs

Algorithms and Data Structures Symposium

August 2021

Applications of Graph Theory and Probability in the Board Game *Ticket to Ride*

International Conference on the Foundations of Digital Games

September 2020

MAA Contributed Paper Session at the Joint Mathematics Meetings

January 2020

Applications of the Quantum Algorithm for *st*-Connectivity

Conference on the Theory of Quantum Computation, Communication and Cryptography

June 2019

SERVICE

I have reviewed papers for the following conferences: QIP 2022, ICALP 2022, TQC 2022.

I run a weekly coding session at Brooklyn International High School.

Spring 2021 - Present

I advised Xiaorui Lei (BIHS '22) and Bryant Chen (BIHS '22) on a summer project.

Summer 2022