

# R. TEAL WITTER

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## EDUCATION

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### 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

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Deep learning, discrete optimization, randomized algorithms, and quantum computing

## NATIONAL AWARDS

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[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

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

Michael Czekanski, Shelby Kimmel, R. Teal Witter. [Robust and Space-Efficient Dual Adversary Quantum Query Algorithms](#). *European Symposium on Algorithms (ESA 2023)*.

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

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### 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

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### 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

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### Conference Reviewing

QIP, ICALP, TQC, NeurIPS

### Journal Reviewing

Information Processing Letters

## MENTORSHIP AND OUTREACH

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Lead weekly coding sessions at Brooklyn International High School.

Spring 2021 - Present

Advised a project by Xiaorui Lei (BIHS '22) and Bryant Chen (BIHS '22).

Summer 2022