

LILY WANG

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lilyxy.github.io

EDUCATION

Master of Science in Engineering

Sept 2020 - Dec 2021

University of Michigan, *Ann Arbor, MI*

Advisors: Viswanath Nagarajan & Euiwoong Lee

Approximation Algorithms, Industrial & Operations Engineering, 4.00 GPA

Bachelor of Mathematics

Sept 2015 - Apr 2020

University of Waterloo, *Waterloo, ON*

Major in Combinatorics & Optimization and Pure Mathematics, 91/100 GPA

AWARDS AND SCHOLARSHIPS

UMichigan Graduate Fellowship

2020 - 2021

Scholarship of Excellence (EPFL)

2019

NSERC Award for Undergraduate Research

2019

NSERC Award for Undergraduate Research

2018

207th Place (Score of 40), Putnam Competition

2017

Combinatorics & Optimization Research Award

2017

Rene Descartes National Scholarship

2015 - 2019

President's Scholarship of Distinction

2015 - 2016

PUBLICATIONS AND PREPRINTS

On Some Variants of Euclidean K-Supplier

with Euiwoong Lee and Viswanath Nagarajan.

To appear in Operation Research Letters.

<https://arxiv.org/abs/2112.01700>

Online Generalized Network Design Under (Dis)Economies of Scale

with Viswanath Nagarajan.

Proceedings of the 32nd ACM-SIAM Symposium on Discrete Algorithms (SODA), 2021

Submitted to Mathematics of Operations Research.

<https://arxiv.org/abs/2007.07721>

SELECTED RESEARCH EXPERIENCE

Graduate Research Projects

June - July, Oct - Dec 2021

CSE/Math, University of Michigan, *Ann Arbor, MI*

- SUPERVISOR: GREG BODWIN
- TOPIC: STRUCTURE OF SHORTEST PATHS

- SUPERVISOR: ALEXANDER BARVINOK
- TOPIC: PARTITION FUNCTION OF HAMILTONIAN CYCLES

Undergraduate Research Assistant

May - Aug 2019

Combinatorics & Optimization, University of Waterloo, *Waterloo, ON*

- SUPERVISOR: LAURA SANITÀ
- TOPIC: DIAMETER OF THE TSP POLYTOPE

Undergraduate Research Assistant

Jan - April 2019

Combinatorics & Optimization, University of Waterloo, *Waterloo, ON*

- SUPERVISOR: BRUCE RICHTER
- TOPIC: PSEUDOCIRCULAR EXTENSIONS OF STRINGS
- *Presented poster on results at Graph Drawing and Network Visualization 2019 and gave talk at Canadian Undergraduate Mathematics Conference (CUMC) 2019*

Undergraduate Research Assistant

Sept - Dec 2018

Computer Science, University of Waterloo, *Waterloo, ON*

- SUPERVISOR: JEFFREY SHALLIT
- TOPIC: COMBINATORICS OF NEAREST AND FURTHEST SMALLER ELEMENTS
- *Presented results in talk at Canadian Discrete and Algorithm Mathematics 2019*
- *Paper in preparation*

PRESENTATIONS AND POSTERS

Online Generalized Network Design Under (Dis)Economies of Scale, SODA2021. Jan 2021
Which Sets of Strings are Pseudospherical? Poster presented at GD19. Sept 2019
TSP Polytope Diameter. Presentation at C&O URA and DisOpt Seminars. Aug, Nov 2019
Obstructions to Psuedocircular Arrangements. Presentation at CUMC. July 2019
Popular Matchings. Talk at UWaterloo CombOpt Reading Group Seminar. June 2019
The Combinatorics of Nearest and Furthest Smaller Values. Talk at CanaDAM. May 2019

WORKSHOPS

STOC 2020 Workshop Day. Online June 2020
 IPCO Summer School. London School of Economics, Online June 2020
 Graph drawing PhD school, Charles University Sep 2019
 Geometry and Topology Workshop. University of Notre Dame Aug 2018
 IPCO Summer School. University of Waterloo June 2017

TEACHING ASSISTANTSHIPS

Tutoring, MATH135 - Introduction to Algebra Winter 2020
 Grader, CO239 - Introduction to Combinatorics Fall 2018
 Grader, MATH114 - Linear Algebra for Science Fall 2017
 Grader, MATH146 - Linear Algebra I for Honours Math (Advanced) Winter 2017
 Grader, MATH147 - Calculus I for Honours Math (Advanced) Fall 2016

OTHER RESEARCH EXPERIENCE

Research Intern

Aug - Nov 2019

DisOpt, EPFL, *Lausanne, Vaud, Switzerland*

- SUPERVISOR: FRIEDRICH EISENBRAND
- TOPIC: BOUNDING FACES OF MINKOWSKI SUMS OF POLYHEDRA

Voting Rights Data Institute Fellow

June - July 2018

Mathematics, Tufts University & CSAIL, MIT, *Boston, MA*

- SUPERVISORS: MOON DUCHIN AND JUSTIN SOLOMON
- TOPIC: ALGORITHM FOR FINDING SHORTEST PATHS ON MCMC META-GRAPH

Undergraduate Research Assistant

May - Aug 2017

Combinatorics & Optimization, University of Waterloo, *Waterloo, ON*

- SUPERVISORS: ASHWIN NAYAK AND DAVE TOUCHETTE
- TOPIC: JOINT PROBABILITY VARIANT OF REVERSE SHANNON THEOREM