
CONTACT sallyqd@cs.washington.edu CITIZENSHIP: Canadian

EDUCATION **University of Washington, Seattle** Sept 2018 – Present
Ph.D. candidate in Computer Science and Engineering
M.Sc., Computer Science and Engineering June 2020
Research interests: design and analysis of algorithms, convex optimization, combinatorics.
Advisor: Yin Tat Lee

University of Waterloo June 2018
B.Math. *with distinction – Dean’s Honours List (highest honours)*
Majors: computer science, combinatorics & optimization, and jointly pure math

PUBLICATIONS AND PREPRINTS Authors are listed in alphabetical order, as is convention in pure math and theoretical computer science.

Faster Algorithms for Structured Linear Programs.
with Gramoz Goranci, Lawrence Li, Sushant Sachdeva, and Guanhao Ye.
Proceedings of the 35th ACM-SIAM Symposium on Discrete Algorithms (SODA), 2024.
<https://arxiv.org/abs/2310.16351>.

Faster Min-Cost Flow on Bounded Treewidth Graphs.
with Guanhao Ye.
<https://arxiv.org/abs/2308.14727>.

Polytopes with Bounded Integral Slack Matrices Have Sub-Exponential Extension Complexity.
with Thomas Rothvoss.
<https://arxiv.org/abs/2307.16159>.

Decomposable Non-Smooth Convex Optimization with Nearly-Linear Gradient Oracle Complexity.
with Haotian Jiang, Yin Tat Lee, Swati Padmanabhan and Guanhao Ye.
NeurIPS, 2022.
<https://arxiv.org/abs/2208.03811>.

Nested Dissection Meets IPMs: Planar Min-Cost Flow in Nearly-Linear Time.
with Yu Gao, Gramoz Goranci, Yin Tat Lee, Richard Peng, Sushant Sachdeva, and Guanhao Ye.
Proceedings of the 33rd ACM-SIAM Symposium on Discrete Algorithms (SODA), 2022.
<https://arxiv.org/abs/2205.01562>.

A Nearly-Linear Time Algorithm for Linear Programs with Small Treewidth: A Multiscale Representation of Robust Central Path.
with Yin Tat Lee and Guanhao Ye.
Proceedings of the 53rd ACM Symposium on Theory of Computing (STOC), 2021.
Invited to SICOMP Special Issue.
<https://arxiv.org/abs/2011.05365>.

Computing Circle Packing Representations of Planar Graphs.
with Yin Tat Lee and Kent Quanrud.
Proceedings of the 31st ACM-SIAM Symposium on Discrete Algorithms (SODA), 2020.
<https://arxiv.org/abs/1911.00612>.

Improved Bounds for Rota’s Basis Conjecture.
with Jim Geelen.
Combinatorica, 2019.

<https://arxiv.org/abs/1709.00075>. Polymath 12 discussions.

Modeling Temporal Effects in Re-captured Video.

P. Schaber, S. Dong, B. Guthier, S. Kopf, W. Effelsberg.

Proceedings of the 23rd ACM International Conference on Multimedia, 2015.

INDUSTRY EXPERIENCE	Amazon Transportation Services , Luxembourg Applied Scientist Intern, Algorithms and Optimization Lab Designed and implemented truck-scheduling algorithms for Amazon's middle-mile transportation network. My work was launched in production for the European and North American network, and led to savings in operating costs of approximately one million Euros per week in Europe.	Oct 2022 – Mar 2023
	The Voleon Group , Berkeley, CA Quantitative Research Intern Built a deep-learning model to approximately solve the optimal portfolio allocation problem for the hedge fund.	June – Sept 2022
	Amazon , Seattle, WA Software Engineering Intern	Sept – Dec 2017
	Intentional Software , Bellevue, WA Software Engineering Intern	Sept – Dec 2015
TEACHING ASSISTANTSHIPS	Introduction to Computing, University of Washington Algorithms, University of Washington Sketching Algorithms, University of Washington Calculus 2, University of Waterloo Introduction to Combinatorics, University of Waterloo Algebra, University of Waterloo	Apr – Jun 2023 Jan – Mar 2022, Apr – Jun 2020 Jan – Mar 2021 Jan – Apr 2017 May – Aug 2015 Sept – Dec 2014
AWARDS	NSERC (Canadian NSF equivalent) Postgraduate Scholarship NSERC Alexander Graham Bell Canada Graduate Scholarship (declined) Financial support for PhD studies in STEM awarded to top candidates across Canada, valued at \$105,000 CAD over 3 years. EECS Great Educators Fellowship, MIT (declined) Jessie W.H. Zou Memorial Award, University of Waterloo Awarded to one student annually in the Faculty of Math for excellence in undergraduate research (with advisor nomination). NSERC Undergraduate Research Award University of Waterloo President's Research Award University of Waterloo President's International Experience Award President's Scholarship of Distinction, University of Waterloo Suncor Energy Inc. Emerging Leaders Award, University of Waterloo Top entrance scholarship in engineering awarded to four students a year.	2021 2021 2018 2018 2016, 2017 2016 2015 2013 2013
SERVICE	External reviewer for the conferences STOC, FOCS, SODA, ESA, ICALP, ITCS. Reviewer for <i>Journal of Privacy and Confidentiality</i> , <i>Annals of Combinatorics</i> , <i>Graphs and Combinatorics</i> , <i>Advances in Applied Mathematics</i> . UW computer science department PhD applications reader. Waterloo CUMC Committee Co-Chair Secured funding, oversaw the application process, and organized the trip for 30 undergraduate students to attend the Canadian Undergraduate Math Conference.	
LANGUAGES	Python, C/C++, Java, C#, Haskell, Matlab Mandarin (native), German (intermediate)	