

Sepehr Hajebi – CV

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CONTACT

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APPOINTMENTS

- **University of Waterloo**, Combinatorics and Optimization
Postdoctoral Scholar (Advisor: Sophie Spirkl) 09/2024 – present
- **Princeton University**, Department of Mathematics
Junior Faculty (Instructor) 09/2024 – never
(Not taken up due to visa delays)

EDUCATION

- **University of Waterloo**, PhD in Combinatorics and Optimization
Thesis: *Foreshadowing the Grid Theorem for Induced Subgraphs*
Advisor: Sophie Spirkl 09/2020 – 08/2024
- **Isfahan University of Technology**, BSc and MSc in Mathematics 09/2012 – 08/2019

AWARDS

- **Graduate Research Excellence Award, 2025** (2500 CAD)
Faculty of Mathematics, University of Waterloo
- **Mathematics Doctoral Prize: 1st place, 2025** (1500 CAD)
Faculty of Mathematics, University of Waterloo
- **Governor General's Gold Medal, Finalist Designation, 2025**
University of Waterloo
- **Sinclair Graduate Scholarship, 2023-2024** (4000 CAD)
Combinatorics and Optimization, University of Waterloo
- **Outstanding TA Award, 2022**
Combinatorics and Optimization, University of Waterloo
- **Math competitions:**
International Mathematics Competition for University Students: Third Prizes, 2015 and 2016
Korean Mathematical Society Contest: Third Prize, 2016
Iranian Mathematical Society Competition: Second and Third Prizes, 2015 and 2016
- **Elite Student Recognition, 2016 and 2018**
Isfahan University of Technology

TALKS

- *Polynomial pathwidth*
Barbados Graph Theory Workshop, Bellairs Research Institute, Holetown, Barbados, 2026

- *Complete bipartite induced minor (and treewidth)*
Willaim Tutte Colloquium, University of Waterloo, 2025
- *Local and global structure of non-basic obstructions to bounded treewidth*
CanaDAM (invited at the Structural Graph Theory Minisymposium), University of Ottawa, 2025.
- *“Underview” of excluded induced subgraphs for bounded pathwidth*
Barbados Graph Theory Workshop, Bellairs Research Institute, Holetown, Barbados, 2025
- *The pathwidth theorem for induced subgraphs*
IBS discrete math seminar, Daejeon, South Korea, 2025
- *The pathwidth theorem for induced subgraphs*
Graphs and Matroids Seminar, University of Waterloo, 2024
- *Anticomplete sets of large treewidth*
BIRS Workshop on New Perspectives in Colouring and Structure, 2024
- *Survey on induced subgraphs of graphs with large treewidth*
Barbados Graph Theory Workshop, Bellairs Research Institute, Holetown, Barbados, 2024
- *Treewidth, Erdős-Pósa and induced subgraphs* [virtual]
New York Combinatorics Seminar, 2024
- *Several Gyárfás-Sumner-type results for treewidth*
Graphs and Matroids Seminar, University of Waterloo, 2023
- *Hitting all maximum stable sets in P_5 -free graphs*
Graphs and Matroids Seminar, University of Waterloo, 2023
- *Forests in even-hole-free graphs of large treewidth*
Barbados Graph Theory Workshop, Bellairs Research Institute, Holetown, Barbados, 2022
- *Holes, hubs, and bounded treewidth* [virtual]
IBS Discrete Math Seminar, 2022
- *Bounded treewidth in hereditary graph classes*
Graphs and Matroids Seminar, University of Waterloo, 2022
- *Bounded treewidth in hereditary graph classes*
Seymour was 70 two years ago, ENS de Lyon, France, 2022

TEACHING

- **Courses taught as Postdoctoral Scholar at Waterloo**
 - CO 380 Mathematical Discovery and Invention (Spring 2026)
 - MATH 135 Algebra for Honours Mathematics (Winter 2026)
 - MATH 116 Calculus I for Engineering (Fall 2025)
- **Courses TA’ed as PhD student at Waterloo**
 - CO 342 Graph Theory (Spring 2023)
 - MATH 138 Calculus II for Honors Mathematics (Winter 2023)
 - MATH 600 Mathematical Software (Fall 2022)
 - CO 456 Game Theory (Fall 2022 and 2023)

- CO 380 Mathematical Discovery and Invention (Spring 2022)
- MATH 239 Introduction to Combinatorics (Winter 2022)
- CO 255 Advanced Optimization (Winter 2022)
- CO 250 Introduction to Optimization (Fall 2021 and 2023, Winter 2023 and 2024, Spring 2024)
- CO 442/642 Graph Theory (Fall 2021)
- CO 351 Network-Flow Theory (Spring 2021)

- **Courses TA'ed as MSc and BSc student at Isfahan University of Technology**

- Computational Complexity (2019)
- Elements of Matrices and Linear Algebra (2018)
- Applied Linear Algebra for Engineering (2018)
- Graph Theory (2014, 2016, 2017)
- Elements of Combinatorics (2014, 2016, 2017)

SERVICE

- **Supervision/Mentorship**

- Graduate students:
 - * Xinyue Fan (MSc, 2024 – present, joint with Sophie Spirkl)
- Directed Reading Program (DRP):
 - * Spring 2024 project: *Non-constructive methods in combinatorics*
Mentees: Anna Henderson and Gioia De Leonardis
 - * Fall 2023 project: *Introduction to graph minor theory*
Mentees: Xinyue Fan and Lyncy Li
- Undergraduate Research Assistant Program (URA):
 - * Spring 2023 project: *Maximum transitive set in H -free tournaments*
Mentee: Yun Xing

- **Organizing**

- *Themes and trends in structural graph theory* – Organizer
Workshop at the American Institute of Mathematics (AIM), to be held in 2027

- **Refereeing for journals and conference proceedings:** IMRN, Combinatorica, JCTb, Eur. J. Combin., J. Graph Theory, Electron. J. Combin., SODA, EuroComb, Workshop Graphs.