

SEPEHR HAJEBI – CV

September 24, 2025

CONTACT

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🌐 <https://www.sepehrhajebi.com>

APPOINTMENTS

- September 2024 – present: **Postdoctoral Scholar** (and sessional Instructor)
Combinatorics and Optimization, University of Waterloo
- Funded by Sophie Spirkl
- September 2024 – August 2025: **Junior faculty** (Instructor)
Department of Mathematics, Princeton University
(Unattended amid visa delays)

EDUCATION

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

AWARDS

- Governor General's Gold Medal, Finalist Designation, 2025
University of Waterloo
- Mathematics Doctoral Prize: First place, 2025 (\$1500 CAD)
Faculty of Mathematics, University of Waterloo
- Graduate Research Excellence Award, 2025 (\$2500 CAD)
Faculty of Mathematics, University of Waterloo
- Sinclair Graduate Scholarship, Fall 2023 and Spring 2024 (\$2000 CAD/term)
Combinatorics and Optimization, University of Waterloo
- Outstanding TA Award, 2022
Combinatorics and Optimization, University of Waterloo
- Math competitions:
 - Korean Mathematical Society Contest: Third Prize, 2016
– Invited and funded by the South Korean Embassy in Iran
 - International Mathematics Competition: Third Prizes, 2015 and 2016
 - Iranian Mathematical Society Competition: Second (2015) and Third (2016) Prizes
- Elite Student Recognition, 2016 and 2018
Isfahan University of Technology

TALKS

- *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, 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, 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, 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

- **Instructor at University of Waterloo**
 - MATH116 Calculus I for engineering (Fall 2025)
- **TA at University of Waterloo**
 - CO342 Graph theory (Spring 2023)
 - MATH138 Calculus II for honors of mathematics (Winter 2023)
 - MATH600 Mathematical software (Fall 2022)
 - CO456 Game theory (Fall 2022 & 2023)

- CO380 Mathematical discovery and invention (Spring 2022)
- MATH239 Introduction to combinatorics (Winter 2022)
- CO255 Advanced optimization (Winter 2022)
- CO250 Introduction to optimization (Fall 2021 & 2023, Winter 2023 & 2024, Spring 2024)
- CO450/650 Graph theory (graduate) (Fall 2021)
- CO351 Network-flow theory (Spring 2021)
- **TA at Isfahan University of Technology**
 - Computational complexity (graduate) (2019)
 - Elements of matrices and linear algebra (2018)
 - Applied linear algebra (for engineering) (2018)
 - Graph theory (2016)
 - Graph theory (graduate) (2014, 2017)
 - Elements of combinatorics (2014, 2016, 2017)

SERVICE

- **Organizing**
 - *Themes and trends in structural graph theory*
Workshop at the American Institute of Mathematics (AIM), to be held in 2027
(Co-organized with B. Alecu, M. Chudnovsky and S. Spirkl).
- **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
- **Refereeing for journals and conference proceedings**

International Mathematics Research Notices, Journal of Combinatorial Theory, Series B, Journal of Graph Theory, European Journal of Combinatorics, Electronic Journal of Combinatorics, ACM-SIAM Symposium on Discrete Algorithms (SODA), European Conference on Combinatorics, Graph Theory and Applications, Workshop on Graphs