

# SEPEHR HAJEBI

Curriculum Vitæ (January 21, 2024)

## CONTACT

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## EDUCATION

2020 – present

**PhD in Mathematics** (anticipate graduating in Spring 2024)  
Combinatorics and Optimization, University of Waterloo  
*Thesis:* Dichotomy theorems for treewidth and induced subgraphs  
*Advisor:* Sophie Spirkl

2012 – 2019

**BSc and MSc in Mathematics**  
Isfahan University of Technology, Isfahan, Iran

## AWARDS

7. **Sinclair Graduate Scholarship** (1900+ CAD)  
Combinatorics and Optimization, University of Waterloo (2023)
6. **Outstanding TA Award**  
Combinatorics and Optimization, University of Waterloo (2022)
5. **Visitor to South Korea (KMS, KIAS, NIMS)**  
Invited and funded by The Embassy of South Korea in Iran (2016)
4. **Korean Mathematical Society Contest for University Students**  
Seoul, South Korea – Third Prize (2016)
3. **International Mathematics Competition for University Students**  
Blagoevgrad, Bulgaria – Third Prize (2015 and 2016)
2. **Iranian Math Society Competition for University Students**  
Second and Third Prize (2015 and 2016)
1. **Elite Student Award**  
Isfahan University of Technology (2016 and 2018)

## TALKS

Upcoming

7. **Treewidth, Erdős-Posá and induced subgraphs** [virtual]  
New York Combinatorics Seminar (Feb 23, 2024)

Past

6. **Several Gyárfás-Sumner-type results for treewidth**  
Graphs and Matroids Seminar, University of Waterloo (Nov 23, 2023)
5. **Hitting all maximum stable sets in  $P_5$ -free graphs**  
Graphs and Matroids Seminar, University of Waterloo (Feb 6, 2023)
4. **Forests in even-hole-free graphs of large treewidth**  
Barbados Graph Theory Workshop, Bellairs Research Institute, Barbados (Dec 12, 2022)
3. **Holes, hubs, and bounded treewidth** [virtual]  
IBS Virtual Discrete Math Colloquium, Daejeon, South Korea (July 7, 2022)
2. **Bounded treewidth in hereditary graph classes**  
Graphs and Matroids Seminar, University of Waterloo (July 5, 2022)

1. **Bounded treewidth in hereditary graph classes**  
Seymour is 70, ENS de Lyon, France (June 22, 2022)

## MENTORSHIP

University of  
Waterloo

2. **Directed Reading Program (DRP)**  
Women in Math (WiM) committee (Fall 2023)  
*Project:* Introduction to graph minor theory  
*Mentees:* Xinyue Fan and Lyncy Li
1. **Undergraduate Research Assistant Program (URA)**  
Department of Combinatorics and Optimization (Spring 2023)  
*Project:* Maximum transitive set in  $H$ -free tournaments  
*Mentee:* Yun Xing

## TEACHING

TA at University  
of Waterloo

10. **CO342 Graph Theory** (Spring 2023)
9. **MATH138 Calculus II for honors of mathematics** (Winter 2023)
8. **MATH600 Mathematical software** (Fall 2022)
7. **CO456 Game theory** (Fall 2022 and 2023)
6. **CO380 Mathematical discovery and invention** (Spring 2022)
5. **MATH239 Introduction to combinatorics** (Winter 2022)
4. **CO255 Advanced optimization** (Winter 2022)
3. **CO250 Introduction to optimization**  
(Fall 2021 and 2023; Winter 2023 and 2024)
2. **CO450/650 Graph theory (graduate)** (Fall 2021)
1. **CO351 Network-flow theory** (Spring 2021)

TA at Isfahan  
University of  
Technology

6. **Computational complexity (graduate)** (2019)
5. **Elements of matrices and linear algebra** (2018)
4. **Applied Linear algebra (for engineering)** (2018)
3. **Graph theory** (2016)
2. **Graph theory (graduate)** (2014, 2017)
1. **Elements of combinatorics** (2014, 2016, 2017)

## SERVICE

Refereeing for  
journals and  
conference  
proceedings

International Mathematics Research Notices  
Journal of Combinatorial Theory, Series B  
European Journal of Combinatorics  
Journal of Graph Theory  
Electronic Journal of Combinatorics  
European Conference on Combinatorics, Graph Theory and Applications  
Workshop on Graphs