

# Saeed Odak

Ottawa, ON, Canada ◇ saeedodak@gmail.com ◇ <https://cglab.ca/~odak> ◇ +1 (343) 463 3223

## EDUCATION

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### Ph.D. in Computer Science

*Expected to graduate on December 2024, GPA: A<sup>+</sup>*

Jan. 2021 – Present

University of Ottawa, Ottawa, Canada

### B.Sc. in Mathematics (Double Major)

*GPA: 18.35/20.00*

Sept. 2014 – Aug. 2019

K. N. Toosi University of Technology, Tehran, Iran

### B.Sc. in Electrical Engineering – Telecommunication

*GPA: 17.21/20.00*

Sept. 2014 – Aug. 2019

K. N. Toosi University of Technology, Tehran, Iran

### High School Diploma in Math and Physics Discipline

*National Organization for Development of Exceptional Talents (NODET)*

Sep. 2010 – Aug. 2014

Gorgan, Iran

## RESEARCH EXPERIENCE

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### Research Assistant

◇ Algorithms, Graphs, and Geometry Lab (AGGLAB), Carleton University, Canada

Jan. 2021 – Present

- Conducted research on **Algorithmic and Structural Graph Theory, Proximity Data Structures, Graph Drawing, Computational Geometry, and Hardness Results.**

◇ LaBRI, University of Bordeaux, France

Sept. – Nov. 2023

- Engaged in research on topics: **Geometric Approximation Algorithms and Motion Planning.**

◇ K. N. Toosi University of Technology, Iran

2019

- **B.Sc. Thesis:** *Routing and Wavelength Assignment (RWA) in Optical Networks* — Supervisor: Lotfollah Beygi

## HONORS AND AWARDS

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◇ **PhD Mobility Program in France (MDF) Research Scholarship** • *University of Bordeaux*

Fall 2023

◇ **International Doctorate Scholarship** • *University of Ottawa*

2021 – Present

◇ **Bronze Medal** in International Mathematics Competition (IMC) • *Blagoevgrad, Bulgaria*

2018

◇ **Silver Medal** in Iranian Mathematics Competition • *Behshahr, Iran*

2018

◇ **Bronze Medal** in Iranian Mathematics Competition • *Shahr-e Kord, Iran*

2017

◇ **7th place** in ACM-ICPC Asia Tehran Regional Contest • *Team Contest @ Sharif University*

2018

◇ **9th place** in ACM-ICPC Asia Tehran Regional Contest • *Team Contest @ Sharif University*

2017

◇ **29th place** in IEEE-Xtreme 15.0 International Programming Contest • *Team Contest Online*

2021

◇ **27th place** in IEEE-Xtreme 12.0 International Programming Contest • *Team Contest Online*

2018

◇ **Ranked 2nd** among all BSc students of Mathematics • *K. N. Toosi University of Technology*

2019

◇ **Ranked 7th** in National Entrance Exam for M.Sc in Computer Science • *Tehran, Iran*

2019

## TEACHING EXPERIENCE

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### Carleton University • Contract Instructor

Jan. – Apr. 2023

*Prepared an entire teaching material for the first year course **Discrete Mathematics** with 141 students.*

### University of Ottawa • Teaching Assistant

Jan. 2021 – Present

*Courses: Design and Analysis of Algorithms, Data Structures and Algorithms, Discrete Structures, Introduction to Computing I, and Introduction to Formal Languages.*

### K. N. Toosi University of Technology • Teaching Assistant

2016 – 2019

*Courses: Algorithm Design, Data Structures, Calculus I and Calculus II.*

### K. N. Toosi University of Technology • Volunteer Teaching

2016 – 2019

*Coaching K. N. Toosi University of Technology ICPC Team*

## MAIN PUBLICATIONS

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- [1] Greg Aloupis, Ahmad Biniaz, Prosenjit Bose, Jean-Lou De Carufel, David Eppstein, Anil Maheshwari, Saeed Odak, Michiel Smid, Csaba D. Tóth, and Pavel Valtr. **Noncrossing Longest Paths and Cycles**. *International Symposium on Graph Drawing and Network Visualization*, 2024.
- [2] Michael Bekos, Prosenjit Bose, Aaron Büngener, Vida Dujmović, Michael Hoffmann, Michael Kaufmann, Pat Morin, Saeed Odak, and Alexandra Weinberger. **On  $k$ -planar Graphs without Short Cycles**. *International Symposium on Graph Drawing and Network Visualization*, 2024.
- [3] Ahmad Biniaz, Prosenjit Bose, Jean-Lou De Carufel, Anil Maheshwari, Babak Miraftab, Saeed Odak, Michiel Smid, Shakhar Smorodinsky, and Yelena Yuditsky. **On Separating Path and Tree Systems in Graphs**. *Submitted to Discrete Mathematics & Theoretical Computer Science*, CoRR, abs/2312.14295, 2023.
- [4] Ahmad Biniaz, Chaeyoon Chung, Jean-Lou De Carufel, John Iacono, Anil Maheshwari, Michiel Smid Saeed Odak, and Csaba D. Tóth. **Tight Bounds on the Number of Closest Pairs in Vertical Slabs**. *To appear*, 2024.
- [5] Nicolas Bonichon, Cyril Gavoille, Nicolas Hanusse, and Saeed Odak. **Euclidean Freeze Tag Problem**. *The Canadian Conference on Computational Geometry (CCCG)*, 2024.
- [6] Prosenjit Bose, Vida Dujmovic, Hussein Houdrouge, Pat Morin, and Saeed Odak. **Connected Dominating Sets in Triangulations**. *Submitted to SODA 2025*, CoRR, abs/2312.03399, 2023.
- [7] Prosenjit Bose, Pat Morin, and Saeed Odak. **An Optimal Algorithm for Product Structure in Planar Graphs**. In Artur Czumaj and Qin Xin, editors, *18th Scandinavian Symposium and Workshops on Algorithm Theory, SWAT 2022, June 27-29, 2022, Tórshavn, Faroe Islands*, volume 227 of *LIPIcs*, pages 19:1–19:14. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2022.
- [8] Jean-Lou De Carufel, Anil Maheshwari, Saeed Odak, Bodhayan Roy, Michiel Smid, and Marc Vicuna. **Hardness Results on Interesting Paths in Directed Acyclic Graphs**. *To appear*, 2024.
- [9] Vida Dujmović, Pat Morin, and Saeed Odak. **Odd Colourings of Graph Products**. *CoRR*, abs/2202.12882, 2022.

## STUDENT SUPERVISION

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Marc Vicuna (Masters)

Thesis Title: *Efficient Computation of Interesting Paths*

Summer 2022 - Winter 2024

School of Computer Science, Carleton University

## TECHNICAL SKILLS

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◇ **Programming Languages:** C++, Java, Python

◇ **Artificial Intelligence and Machine Learning:** Achieved perfect score in a Task-Oriented course [Certificate]

## PAPER REVIEWS

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**Conferences:** ISAAC 2022, CCCG 2022, CCCG 2023, WADS 2023, SWAT 2024, CALDAM 2024

**Journals:** Computational Geometry: Theory and Applications, Computing in Geometry and Topology

## WORKSHOPS AND SUMMER SCHOOLS

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**Summer School in Convex and Discrete Geometry**

*Erdős Center - Alfréd Rényi Institute of Mathematics*

2023

Budapest, Hungary

**Tenth and Eleventh Annual Workshop on Geometry and Graphs**

*Bellairs Research Institute*

2023, 2024

Holetown, Barbados

**Summer School in Geometry and Topology in a Discrete Setting**

*Berlin Mathematical School*

2022

Berlin, Germany

**Workshop in Graph Product Structure Theory (21w5235)**

*The Banff International Research Station for Mathematical Innovation and Discovery (BIRS)*

2021

Banff, Canada

**Workshop in Data Science and Combinatorial Algorithms**

*KNTU, Department of Computer Science and Statistics*

2019

Tehran, Iran

**Summer School in Mathematics**

*Institute for Advanced Studies in Basic Sciences*

2018

Zanjan, Iran