

Saeed Odak

Aalto University, Finland ◇ saeedodak@gmail.com ◇ <https://cglab.ca/~odak> ◇ +1 (343) 463 3223

RESEARCH EXPERIENCE

Postdoctoral Researcher

- ◇ Computational Geometry Group, Aalto University, Finland May 2025 – Present
- Conducting research on **Algorithmic and Structural Graph Theory, Hyperbolic Geometry, Fine-grained Complexity and Hardness Results.**

Research Assistant

- ◇ Algorithms, Graphs, and Geometry Lab (AGGLAB), Carleton University, Canada Jan. 2021 – May 2025
- 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 Robot Motion Planning.**
- ◇ K. N. Toosi University of Technology, Iran 2019
- **B.Sc. Thesis:** *Routing and Wavelength Assignment (RWA) in Optical Networks* — Supervisor: Lotfollah Beygi

EDUCATION

- Ph.D. in Computer Science** Jan. 2021 – May 2025
Algorithms, Graphs, and Geometry University of Ottawa, Ottawa, Canada
- B.Sc. in Mathematics (Double Major)** Sept. 2014 – Aug. 2019
GPA: 18.35/20.00 K. N. Toosi University of Technology, Tehran, Iran
- B.Sc. in Electrical Engineering – Telecommunication** Sept. 2014 – Aug. 2019
GPA: 17.21/20.00 K. N. Toosi University of Technology, Tehran, Iran
- High School Diploma in Math and Physics Discipline** Sep. 2010 – Aug. 2014
National Organization for Development of Exceptional Talents (NODET) Gorgan, Iran

RESEARCH INTEREST

- ◇ Computational Geometry ◇ Combinatorics & Structural Graph Theory
◇ Algorithms Design ◇ Data Structures

STUDENT SUPERVISION

- Marc Vicuna (Masters)** Summer 2022 - Winter 2024
Thesis Title: *Efficient Computation of Interesting Paths* School of Computer Science, Carleton University

TEACHING EXPERIENCE

- 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 & II, 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

HONORS AND AWARDS

- ◇ **PhD Mobility Program in France (MDF) Research Scholarship** • *University of Bordeaux* Fall 2023
- ◇ **International Doctorate Scholarship** • *University of Ottawa* 2021 – 2025
- ◇ **Ph.D. Admission Scholarship** • *University of Ottawa* 2021 – 2024
- ◇ **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
- ◇ **Silver Medal** in ACM-ICPC Asia Tehran Regional Contest • *Team Contest @ Sharif University* 2019
- ◇ **7th place** in ACM-ICPC Asia Tehran Regional Contest • *Team Contest @ Sharif University* 2018
- ◇ **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

PAPER REVIEWS

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

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

INVITED TALKS

- An Optimal Algorithm for Product Structure in Planar Graphs** Fall 2023
LaBRI, University of Bordeaux France, Bordeaux
- An Optimal Algorithm for Product Structure in Planar Graphs** Fall 2024
Aalto University Finland, Espoo

WORKSHOPS AND SUMMER SCHOOLS

- Summer School in Convex and Discrete Geometry** 2023
Erdős Center - Alfréd Rényi Institute of Mathematics Budapest, Hungary
- Tenth and Eleventh Annual Workshop on Geometry and Graphs** 2023, 2024
Bellairs Research Institute Holetown, Barbados
- Summer School in Geometry and Topology in a Discrete Setting** 2022
Berlin Mathematical School Berlin, Germany
- Workshop in Graph Product Structure Theory (21w5235)** 2021
The Banff International Research Station for Mathematical Innovation and Discovery (BIRS) Banff, Canada
- Workshop in Data Science and Combinatorial Algorithms** 2019
KNTU, Department of Computer Science and Statistics Tehran, Iran
- Summer School in Mathematics** 2018
Institute for Advanced Studies in Basic Sciences Zanjan, Iran

- [1] Greg Aloupis, Ahmad Biniiaz, 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**. In Stefan Felsner and Karsten Klein, editors, *32nd International Symposium on Graph Drawing and Network Visualization, GD 2024, September 18-20, 2024, Vienna, Austria*, volume 320 of *LIPICs*, pages 36:1–36:17. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2024.
- [2] Michael A. Bekos, Prosenjit Bose, Aaron Büngener, Vida Dujmovic, Michael Hoffmann, Michael Kaufmann, Pat Morin, Saeed Odak, and Alexandra Weinberger. **On k -Planar Graphs Without Short Cycles**. In Stefan Felsner and Karsten Klein, editors, *32nd International Symposium on Graph Drawing and Network Visualization, GD 2024, September 18-20, 2024, Vienna, Austria*, volume 320 of *LIPICs*, pages 27:1–27:17. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2024.
- [3] Ahmad Biniiaz, 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**. *Discret. Math. Theor. Comput. Sci.*, 27(2), 2025.
- [4] Ahmad Biniiaz, Chaeyoon Chung, Jean-Lou De Carufel, John Iacono, Anil Maheshwari, Saeed Odak, Michiel Smid, and Csaba D. Tóth. **Tight Bounds on the Number of Closest Pairs in Vertical Slabs**. *Submitted to The Algorithms and Data Structures Symposium, WADS 2025*.
- [5] Ahmad Biniiaz, Anil Maheshwari, Magnus Christian Ring Merrild, Joseph S. B. Mitchell, Saeed Odak, Valentin Polishchuk, Eliot W. Robson, Casper Moldrup Rysgaard, Jens Kristian Refsgaard Schou, Thomas C. Shermer, Jack Spalding-Jamieson, Rolf Svenning, and Da Wei Zheng. **Polynomial-Time Algorithms for Contiguous Art Gallery and Related Problems**. In Oswin Aichholzer and Haitao Wang, editors, *41st International Symposium on Computational Geometry, SoCG 2025, June 23-27, 2025, Kanazawa, Japan*, volume 332 of *LIPICs*, pages 20:1–20:21. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2025.
- [6] Ahmad Biniiaz, Anil Maheshwari, Joseph S. B. Mitchell, Saeed Odak, Valentin Polishchuk, and Thomas C. Shermer. **Contiguous Boundary Guarding**. *CoRR*, abs/2412.15053, 2024.
- [7] Nicolas Bonichon, Cyril Gavoille, Nicolas Hanusse, and Saeed Odak. **Euclidean Freeze-Tag Problem on Plane**. *The Canadian Conference on Computational Geometry, CCCG 2024*.
- [8] Prosenjit Bose, Vida Dujmovic, Hussein Houdrouge, Pat Morin, and Saeed Odak. **Connected Dominating Sets in Triangulations**. *Submitted to SIAM Journal on Computing (SICOMP)*, CoRR, abs/2312.03399.
- [9] 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.
- [10] Kevin Buchin, Antonia Kalb, Anil Maheshwari, Saeed Odak, Carolin Rehs, Michiel Smid, and Sampson Wong. **Computing Oriented Spanners and Their Dilation**. In Oswin Aichholzer and Haitao Wang, editors, *41st International Symposium on Computational Geometry, SoCG 2025, June 23-27, 2025, Kanazawa, Japan*, volume 332 of *LIPICs*, pages 27:1–27:17. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2025.
- [11] Jean-Lou De Carufel, Anil Maheshwari, Saeed Odak, Bodhayan Roy, Michiel Smid, and Marc Vicuna. **Deciding if a DAG is Interesting is Hard**. *Submitted to the journal of Computational Geometry and Topology (CGT)*, 2025.
- [12] Vida Dujmović, Pat Morin, and Saeed Odak. **Odd Colourings of Graph Products**. *CoRR*, abs/2202.12882, 2022.