

I am currently an assistant professor at Ryerson University.

Academic background

University of Windsor and CAMufacturing Postdoc researcher, (January 2020-September 2020)

- I worked on the geometric problems arising in Additive manufacturing. I created novel and efficient algorithms for use in Computer-Aided systems.
- Mitacs postdoctoral researcher.

University of Manitoba

Ph.D., Computer Science, (September 2014-September 2019)

- Thesis: Computational Geometry Algorithms for Visibility Problems
- o Advisors: Dr. Stephane Durocher and Dr. Prosenjit K. Bose
- o Cumulative GPA: 4.40 / 4.5
- Visitor of Computational Geometry Lab of Carleton University (5 months)
- Member of the Geometric, Approximation and Distributed Algorithms lab in the University of Manitoba, Department of Computer Science.
- o Member of CG lab in Carleton University, School of Computer Science.

Amirkabir University of Technology

M.Sc., Computer Science, (September 2011-October 2013)

- o Thesis: Using Geometric Algorithms for Pursuit-Evasion problem
- o Advisors: Dr. Ali Mohades, Dr. Marzieh Eskandari, Dr. Steven M. Lavalle
- o Cumulative GPA: 19.42 / 20

Tarbiat Moallem University of Tehran (Kharazmi University)

B.Sc., Computer science, (February 2007-February 2011)

o Cumulative GPA: 18.32 / 20

Research interests and skills

- o Algorithm design and implementation
- o Pioneering topics in Computational Geometry
- Theory of Computation and Complexity on different computational models, including Turing, Cellular Automata, and Quantum Computing
- o Computer Graphics and rendering algorithms
- o Virtual Reality

Programming skills

- o Strong experience: C++, C, Java, and Python
- Familiar with: C#, and MatLab

Publications

[1] Y. Bahoo, P. Bose, S. Durocher, T. Shermer. *Computing the k-Crossing Visibility Region of a Point in a Polygon*. Journal of Theory of Computing Systems, 2020.

[2] Y. Bahoo, P. Bose, S. Durocher. *Watchtower for k-crossing Visibility*. 31th Canadian Conference on Computational Geometry, 2019.

[3] Y. Bahoo, P. Bose, S. Durocher, T. Shermer. *Computing the k-Visibility Region of a Point in a Polygon*. 30th International Workshop on Combinatorial Algorithms, 2019.

[4] Y. Bahoo, S. Durocher, J. M. Keil, S. Mehrabi, S. Mehrpour, D. Mondal. *Polygon Simplification by Minimizing Convex Corners*. Journal of Theoretical Computer Science, 2019.

[5] E. Arseneva, Y. Bahoo, A. Biniaz, P. Cano, F. Chanchary, J. Iacono, K. Jain, A. Lubiw, D. Mondal, K. Sheikhan and C. D. Toth. *Compatible Paths on Labelled Point Sets*. Proc. 30th Canadian Conference on Computational Geometry, 2018.

[6] Y. Bahoo, B. Banyassady, P. Bose, S. Durocher, W. Mulzer. *A Time-Space Trade-off for Computing the k-Visibility Region of a Point in a Polygon*. Journal of Theoretical Computer Science, 2018.

[7] Y. Bahoo, S. Durocher, S. Mehrpour, D. Mondal. *Exploring Increasing-Chord Paths and Trees*. Proc. 29th Canadian Conference on Computational Geometry, 2018.

[8] Y. Bahoo, B. Banyassady, P. Bose, S. Durocher, W. Mulzer. *Time-Space Trade-Off for Finding the k-Visibility Region of a Point in a Polygon*. WALCOM: Algorithms and Computation: 11th International Conference and Workshops, WALCOM 2017, Hsinchu, Taiwan, March 29–31, 2017, Proceedings. Vol. 10167. Springer, 2017.

[9] Y. Bahoo, S. Durocher, J. M. Keil, S. Mehrabi, S. Mehrpour, D. Mondal. *Polygon Simplification by Minimizing Convex Corners*. International Computing and Combinatorics Conference. Springer International Publishing, 2016.

[10] Y. Bahoo, B. Banyassady, P. Bose, S. Durocher, W. Mulzer. *Finding the k-visibility region of a point in a simple polygon in the memoryconstrained model*. Proc. 32nd European Workshop Comput. Geom.(EWCG). 2016.

[11] Y. Bahoo, A. Bunt, S. Durocher, S. Mehrpour. *Drawing Graphs Using Body Gestures*. Proc. 23rd International Symposium on GD 2015.

[12] Y. Bahoo, A. Mohades, M. Eskandari, M. Sorouri. *2.modem Pursuit-Evasion Problem*. Proc. 29th European Workshop on Computational Geometry, 2013.

[13] M. Eskandari, Y. Bahoo. *Blocking an Evader in a Polygon by a 2-modem Searcher*. Proc. CITaDim, 2013.

Honors and awards

- o Dean's Discovery Bridging Supplement \$8,000 (2021).
- Faculty of Science Dean's Research Fund booster \$10,000 (2021).
- Nominated by Ryerson University for Microsoft Research Faculty Fellowship for the value of \$100,000 yearly for two years (2021).
- FOS Undergraduate Interdisciplinary Research Opportunities Program \$10,471.80 (2021).
- o Dean's Research Fund Post Doctoral Fellowship \$33,010 (2021).
- o OCI+NSERC grant \$90,000 [\$75,000 in cash] (2021).
- Startup Budget from Ryerson University \$110,000 (2020).
- Faculty of graduate studies travel award (2019).
- o Reine-Baniuk Memorial Scholarship (2017).
- o Invited for Fields Workshop on Discrete and Computational Geometry, Carleton University, (2017).
- Faculty of graduate studies travel award (2016).
- Awarded for University of Manitoba Graduate Fellowship (UMGF) (2015).
- o Awarded for Gordon P. Osler Graduate Scholarship (2015).

- Awarded for Gordon P. Osler Book Prize (2015).
- o International Graduate student Scholarship (2015).
- Awarded for University of Manitoba Guaranteed Funding Package (GFP) (2014).
- o International Graduate Entrance Student Scholarship (2014).
- o Rank 1, among students in computer science (M.S. degree) (2013).
- o Rank 1, among students in computer science (B.S. degree) (2011).
- Presentation at 30th International Workshop on Combinatorial Algorithms, Pisa, Italy (2019).
- o Presentation at 31st Canadian Conference on Computational Geometry, Edmonton, Canada (2019).
- Presentation at 30nd Canadian Conference on Computational Geometry, Winnipeg, Canada (2018).
- Presentation at 22nd International Computing and Combinatorics Conference, Ho Chi Minh, Vietnam (2016).
- o Presentation at 23rd International Symposium on Graph Drawing, Los Angeles, US (2015).
- o Presentation at 5th Winter School of Computational Geometry, Tehran, Iran (2013).
- o Presentation at 4th Winter School of Computational Geometry, Tehran, Iran (2012).
- Presentation at 1st IPM Conference on Theoretical Aspects of Computer Science, Tehran, Iran (2012).

Work experience, services and volunteering

- o Vice-chair, Departmental Concil, Department of Computer Science, Ryerson University, 2021-2022
- o Departmental Representative, Ryerson Faculty Association, 2020-2022.
- o Chair, Graduate Curriculum Committee, 2020-2022.
- o Committee Member, Graduate Membership Committee, 2020-2022.
- Committee Member, President's Entrance Scholarship and Terence Grier Entrance Scholarship Selection Committee, 2020-2021.
- **o Co-chair**, 34^{th} Canadian Conference on Computational Geometry, 2021-2022.
- o Chair, Local Organizing Committee, 34th Canadian Conference on Computational Geometry, 2021-2022.
- o Co-chair, SIAM Conference on Discrete Mathematics (DM22), 2021-2022.
- Program Committee Member, 34th Canadian Conference on Computational Geometry, 2021-2022.
- Program Committee Member, The 5th Iranian Conference on Computational Geometry, 2021-2022.
- Member, Association for Women in Mathematics (AWM), 2021-2022.
- o Member, American Mathematical Society (AMS), 2021-Present.
- o Judge, Superposition Toronto's All-Female/Non-Binary Hackathon, 2021.
- o Advisory Board, Predictive Analytic and Artificial Intelligence Programs, University of Winnipeg, 2020.
- o Department Council Member, Computer Science Department, University of Manitoba, 2016-2017.
- Volunteer at Science Rendezvous, University of Manitoba, 2017.
- o Local Organiser, 30th Canadian Conference on Computational Geometry, 2018.
- o Local Organiser, 6th Winter School of Computational Geometry, Iran, 2014.
- o Local Organiser, 4th Iran Origami conference and competition, Iran, 2012.
- **Reviewer**, Theoretical Computer Science, 2021.
- o Reviewer, Computational Geometry: Theory and Applications, 2021.
- o Reviewer, IEEE Access, 2020.
- o Reviewer, Journal of Computer Mathematics: Computer Systems Theory, 2020.
- o Reviewer, Journal of Graphs and Combinatorics, 2020.
- o Reviewer, LATIN, 2020.
- o Reviewer, WALCOM, 2019.
- o Reviewer, Graph Drawing and Network Visualization, 2017.
- o Reviewer, Elsevier, 2016.
- **Reviewer**, CGTA, 2016.
- o Instructor for Data Structure, Ryerson University, Fall 2021.

- o Instructor for Algorithms, Ryerson University, Winter 2021.
- o Instructor for Programming Basics, University of Winnipeg, Summer 2020.
- o Instructor for Introduction to Java, University of Winnipeg, Fall 2019.
- o Instructor for C Programming Basics, University of Winnipeg, Fall 2019.
- o Instructor for Analysis of Algorithm, University of Manitoba, Summer 2019.
- o Software Test Engineer, Tosan, Iran, December 2013-August 2014.
- o Marketing and IT, Gordafarid, Iran, September 2006-March 2009.

Supervision

Current

- o Onur Çağırıc, Postdoc
- o Rahnuma Islam Nishat, Postdoc
- o Kody Manastyrski, Master's student
- o Christopher Kolios, Master's student
- o Roni Sherman, Master's student
- o Jill Aghyourli Zalat, Bachelor's student

Alumni

- o Yi Gan, Bachelor's student
- o Yunfei Xie, Bachelor's student
- o Yujie Chen, Bachelor's student
- o Chin Ming Wong, Bachelor's student