Nima Hoda

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Education

- Ph.D. Mathematics, McGill University, Defended Jan. 9, 2019
- M.Sc. Mathematics, McGill University, Oct. 2015
- B.Math Honours in Computer Science and Mathematics, Carleton University, Jun. 2013

Honours and Awards

- Pelletier Fellowship, 2018/2019
- ISM Scholarship, 2018/2019
- Graduate Mobility Award, 2017
- NSERC Postgraduate Scholarship–Doctoral Program, 2015-2018
- ISM Scholarship, 2014/2015
- Lorne Trottier Fellowship, 2013/2014
- Governor General's Academic Medal, 2013
- NSERC Canada Graduate Scholarship–Master's Program, 2013/2014
- Richard J. Semple Memorial Award, 2012/2013
- Carleton Academic Scholarship, 2012/2013
- NSERC Undergraduate Student Research Award, 2012
- I-CUREUS Research Internship, 2012
- Helga H. Schirmer Scholarship in Mathematics, 2011/2012
- Carleton Academic Scholarship, 2011/2012
- NSERC Undergraduate Student Research Award, 2011

Languages and Citizenship

Citizenship: Canadian

Languages: English: native
French: intermediate
Persian: conversational

Papers

Published:

- Hoda, N., Osajda, D. *Two-Dimensional Systolic Complexes Satisfy Property A*, Internat. J. Algebra Comput. 28 (2018), no. 7, 1247–1254.
- Bose, P., Dujmović, V., Hoda, N., Morin, P. *Visibility-Monotonic Polygon Deflation*, Contrib. Discrete Math. 10 (2015), no. 1, 1–21.

Submitted for publication:

- Hoda, N., Wise, D., Woodhouse, D. *Residually Finite Tubular Groups*, arXiv:1811.08098 (2018), 16 pages.
- Hoda, N. *Shortcut Graphs and Groups*, arXiv:1811.05036 (2018), 34 pages.
- Hoda, N. *Bisimplicial Complexes and Asphericity*, arXiv:1804.04630 (2018), 18 pages.
- Hoda, N. *Quadric Complexes*, arXiv:1711.05844 (2017), 24 pages.

In preparation:

- Hoda, N. *Strong Helly Families and Quadric Groups*.

Presentations and Talks

- *Shortcut Graphs and Groups*, McGill Geometric Group Theory Seminar, 2019.
- *Quadric Complexes*, Nonpositively Curved Groups on the Mediterranean, 2018.
- *Geocyclic Groups*, McGill Geometric Group Theory Seminar, 2017.
- *Quadric Complexes*, Séminaire Algorithmique, Combinatoire et Recherche Opérationnelle, Laboratoire d'Informatique Fondamentale de Marseille, 2018.
- *An Invitation to Combinatorial Group Theory*, Carleton University Algorithms Seminar, 2017.
- *Quadric Complexes*, Cornell Topology and Geometric Group Theory Seminar, 2017.
- *Quadric Complexes*, Wroclaw Geometry Seminar, 2017.
- *Dismantlable Graphs*, McGill Discrete Mathematics and Optimization Student Seminar, 2017.
- *Quadric Complexes*, Young Geometric and Asymptotic Group Theory with Applications, 2017.
- *Braid Groups are Left-Orderable*, McGill Geometric Group Theory Seminar, 2014.
- *Discrete Morse Theory of Forman*, Cookies and My Favorite Object in Math Graduate Student Seminar, 2014.
- *Visibility-Monotonic Polygon Deflation*, Canadian Conference on Computational Geometry, 2012.
- *Moser's entropy compression technique*, Carleton University Algorithms Seminar, 2012.
- *A Few Best Practices in Programming*, Carleton Computer Science Society Lecture Series, 2011.

Service Roles

Organizer of the McGill Geometric Group Theory Seminar, Sep. 2017 – Dec. 2018

Employment History

Term Assistant Professor (Adiunkt), Feb. 2019 – present

University of Wrocław

Teaching Assistant for MATH 235, Sep. 2018 – Dec. 2018

McGill University

- Prepared and taught weekly tutorials helping students with class material and solving examples.
- Graded final exam questions.
- Met with students during office hours for additional help

Teaching Assistant for MATH 150, Sep. 2015 – Dec. 2015

McGill University

- Prepared and taught weekly tutorials covering class material and solving examples.
- Graded midterm and final exam questions.

Teaching Assistant for MATH 123, Jan. 2014 – Apr. 2014

McGill University

- Prepared and taught weekly tutorials covering class material and solving examples.
- Graded midterm and final exam questions.

Software Developer, May 2013 – Jun. 2013

Legitmix Inc., Ottawa

- Substantially improved software performance by optimizing a core library algorithm.
- Ported the core library to Apple iOS platforms.
- Updated external software dependencies to the latest stable releases.
- Deployed a fully automated virtual-machine-based cross-platform build system.

Research Assistant, Sep. 2011 – Aug. 2012

Computational Geometry Group, Carleton University, Ottawa

- Solved open problem in the visibilities of polygons under deformation.
  - Primary author of paper describing the results.
  - Presented paper at 24th Canadian Conference on Computational Geometry.
- Proofread textbook "Open Data Structures" by Pat Morin, published 2013 by Athabasca Univ Press.

Software Developer, Jul. 2010 – Sep. 2010

Legitmix Inc., Ottawa

- Implemented data structures for representation of sparse graphs used in Low Density Parity Check codes (LDPC).
- Implemented a generic LDPC syndrome-decoder based on the belief propagation algorithm.