Nima Hoda

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Education

- McGill University, Sep. 2015 – present
  - Ph.D. Mathematics and Statistics
- McGill University, Sep. 2013 – Aug. 2015
  - M.Sc. Mathematics and Statistics
  - Graduated Oct. 2015
- Carleton University, Jan. 2010 – Apr. 2013
  - B.Math Combined Honours in Computer Science and Mathematics
  - Graduated Jun. 2013 with Highest Distinction, CGPA: 12.0/12.0

Honours and Awards

- 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
- Ontario Graduate Scholarship, 2013/2014 (declined)
- Gary S. Duck Scholarship, 2013/2014 (declined)
- J. Lorne Gray Scholarship, 2013/2014 (declined)
- 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

Papers

- Bose, P., Dujmović, V., Hoda, N., Morin, P. *Visibility-Monotonic Polygon Deflation*, Contrib. Discrete Math. 10 (2015), no. 1, 1–21.
- Hoda, N. *Quadric Complexes*, Submitted to Trans. Amer. Math. Soc. (2017), 24 pages.
- Hoda, N. *Contractibility of the Bisimplicial Completions of Quadric Complexes*, In preparation.
- Hoda, N., Osajda, D. *2-Dimensional Systolic Complexes Satisfy Property A*, In preparation.
- Hoda, N. *Geodesic Cycles and Groups*, In preparation.
- Hoda, N. *Strong Helly Families and Quadric Groups*, In preparation.

Presentations and Talks

- *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.
- *Quadric Complexes*, Young Geometric and Asymptotic Group Theory with Applications, 2017.
- *Dismantlable Graphs*, McGill Discrete Mathematics and Optimization Student Seminar, 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.

Organizational Roles

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

McGill University, Montreal

Recent Employment History

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

McGill University, Montreal

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

Software Developer (Summer Contract), 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 an open problem in the visibilities of polygons under deformation.
  - Was primary author of a paper describing the results (see *Visibility-Monotonic Polygon Deflation* above).
  - Presented an abridged version of the paper at the 24th Canadian Conference on Computational Geometry.
- Proofread the textbook Open Data Structures by Pat Morin, published Aug. 2013 by Athabasca University Press.

Software Developer (Summer Contract), Jul. 2010 – Sep. 2010

Legitmix Inc., Ottawa

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