

Nima Hoda

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Languages and Citizenship

Citizenship: Canadian

Languages: English: native
French: advanced
Persian: conversational

Education and Academic Positions

- Postdoctoral Researcher, École Normale Supérieure, Oct. 2019 – present
- Assistant Professor (Adiunkt), University of Wrocław, Feb. 2019 – Sep. 2019
- 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

Papers

Accepted for publication or in print:

- Hoda, N., Wise, D., Woodhouse, D. *Residually Finite Tubular Groups*, Proc. Royal Soc. Edinburgh Sec. A, to appear.
- Hoda, N. *Quadric Complexes*, Michigan Mathematical Journal 69 (2020), no. 2, 241–271.
- 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. *Strongly Shortcut Spaces*, arXiv:2010.07400 (2020), 30 pages.
- Hoda, N., Krishna M S, S. *Relatively hyperbolic groups with strongly shortcut parabolics are strongly shortcut*, arXiv:2010.03421 (2020), 13 pages.
- Hoda, N. *Crystallographic Helly Groups*, arXiv:1804.04630 (2020), 17 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.

Preprint:

- Haettel, T., Hoda, N., Petyt, H. *The coarse Helly property, hierarchical hyperbolicity, and semihyperbolicity*, arXiv:2009.14053 (2020), 33 pages.

In preparation:

- Hoda, N., Swiatkowski, J. *Trees of Graphs as Boundaries of Hyperbolic Groups*.

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

Presentations and Talks

- *Shortcut Graphs and Groups*, Virtual Geometric Group Theory Conference, CIRM, 2020.
- *Constructing Bisimplices*, Workshop on Polyhedral Products in Geometric Group Theory, Fields Institute, 2020.
- *Shortcut Graphs and Groups*, Séminaire Gaston Darboux, Université de Montpellier, 2020.
- *Shortcut Graphs and Groups*, Group Theory Seminar, ENS Paris, 2019.
- *Crystallographic Helly Groups*, Ottawa–Carleton Joint Algebra Seminar, 2019.
- *Shortcut Graphs and Groups*, Geometry and Analysis on Groups Research Seminar, University of Vienna, 2019.
- *Constructing Bisimplices*, Ottawa–Carleton Combinatorics and Optimization Seminar, 2019.
- *Shortcut Graphs and Groups*, Geometry and Topology Seminar, University of Warwick, 2019.
- *Crystallographic Helly Groups*, McGill Geometric Group Theory Seminar, 2019.
- *Shortcut Graphs and Groups*, Geometry and Topology Seminar, Technion, 2019.
- *Crystallographic Helly Groups*, Wrocław Geometry Seminar, 2019.
- *Shortcut Graphs and Groups*, Banach Center Simons Semester Seminar, 2019.
- *Constructing Bisimplices*, McGill Geometric Group Theory Seminar, 2019.
- *Shortcut Graphs and Groups*, Wrocław Geometry 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*, Wrocław 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 Group Theory Seminar of the École Normale Supérieure, Oct. 2019 – present

Local Organizer of Maths-Sciences 2020 at the École Normale Supérieure, Jul. 2020

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

Teaching

Small Cancellation Theory, Mar. 2019 – Jun. 2019

University of Wrocław

- Prepared notes from which I taught lectures.
- Prepared exercises for students to solve during exercise sessions.

Geometric Group Theory, Mar. 2019 – Jun. 2019

University of Wrocław

- Organized a student learning seminar course following the introductory text of Clara Löh.

Combinatorial Group Theory, Mar. 2019 – Jun. 2019

University of Wrocław

- Lead problem solving sessions for students based on exercises prepared by the lecturer of the course.

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.

Industry Experience

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.

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.

Last updated: October 18, 2020