Mengxue Yang

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EDUCATION

University of Illinois at Chicago, USA — 2017 – expected 2022
Ph.D. Candidate in Mathematics
Thesis: Generalized opers (in progress)
Advisor: Laura Schaposnik

University of Waterloo, Canada — 2012 – 2017
B.M. Honours Pure Mathematics and Honours Computer Science, Co-op Program
Degree Honours: With Distinction

PAPERS AND PREPRINTS

A comparison of generalized opers and (G, P)-opers, *Indian J Pure Appl Math (2021).* doi:10.1007/-s13226-021-00170-0

On the generalized SO$(2n, \mathbb{C})$-opers, with Indranil Biswas and Laura Schaposnik, *Ann Glob Anal Geom (2021).* doi:10.1007/s10455-021-09783-4

Generalized B-opers, with Indranil Biswas and Laura Schaposnik, *SIGMA 16 (2020).* doi:10.3842/-SIGMA.2020.041

TEACHING EXPERIENCE

Instructor, UIC
MATH 104 Mathematical Reasoning Workshop — Fall 2021
Young Scholar Program at UIC — Summer 2021
MATH 077 Mathematical Reasoning Workshop — Spring 2021
Summer Enrichment Workshop for College Algebra — Summer 2020
MATH 179 Emerging Scholars Workshop for Calculus I — Fall 2019

Teaching Assistant, UIC
MATH 105 Mathematical Reasoning — Fall 2021
MATH 210 Calculus III — Fall 2020
MATH 125 Linear Algebra for Business — Spring 2020
MATH 180 Calculus I — Fall 2019
MATH 165 Calculus for Business — Spring 2019
MATH 118 Mathematical Reasoning — Fall 2018
MATH 181 Calculus II — Summer 2018
MATH 180 Calculus I — Spring 2018
MATH 180 Calculus I — Fall 2017

Grader, UIC
MATH 414 Real Analysis II   Spring 2021

Instructional Support Assistant, Waterloo
CS 145 Designing Functional Programs (Advanced Version)   Fall 2015

Honours and Awards

8. MSCS Teaching Assistant Award, UIC   2021

7. Oberwolfach Leibniz Graduate Student, MFO   2019

6. Bodmer International Travel Award, UIC   2019

5. Teaching Assistantship, UIC   2017–

4. Undergraduate Student Research Award, Waterloo   2016

3. Funding Award for Women In Math Summer School, UBC   2016

2. Undergraduate Student Research Award (x2), Waterloo   2016

1. President's Scholarship of Distinction, Waterloo   2012

Talks

12. *Complex projective structures*, Graduate Geometry/Topology Seminar, UIC, Oct 2021

11. *Intro to Teichmuller theory II: annuli*, Graduate Geometry, Topology and Dynamics Seminar, UIC, Feb 2020

10. *Stable Higgs bundles*, Graduate Geometry, Topology and Dynamics Seminar, UIC, Nov 2019

9. *Combinatorics of Coxeter systems*, Graduate Geometry, Topology and Dynamics Seminar, UIC, Sept 2019

8. *Morse inequalities*, Graduate Geometry, Topology and Dynamics Seminar, UIC, Feb 2019

7. *The Curvature of Higher Dimensional Manifolds, Part I*, Differential Geometry Student Seminar, Waterloo, Oct 2016

6. *Curves*, Differential Geometry Student Seminar, Waterloo, Sept 2016

5. *Subknots in Ideal Knots, Random Knots, and Knotted Proteins*, Women in Math Summer School, UBC, Aug 2016

4. *The Second Fundamental Form*, Geometry Working Seminar, Waterloo, Aug 2016

3. *Things I Learned About Gauss–Bonnet*, Canadian Mathematics Undergraduate Conference, University of Victoria, Jul 2016

2. *The Intrinsic Geometry of Surfaces*, Geometry Working Seminar, Waterloo, Jun 2016

1. *The Picture Hanging Problem*, Canadian Mathematics Undergraduate Conference, University of Alberta, Jun 2015

CONFERENCES AND WORKSHOPS ATTENDED

9. Riemann surfaces and their moduli spaces, Utah, Feb 2020

8. Quantum Field Theory and Manifold Invariants, PCMI (with financial support), Jul 2019

7. Geometric representation theory and low-dimensional topology, Edinburgh, Jun 2019

6. Geometry and Physics of Higgs bundles, MFO, May 2019

5. A Workshop on Challenges at the Interface of Hitchin Systems and String Theory, Simons Center, Mar 2019

4. Workshop on the Geometry and Physics of Higgs bundles IV, Simons Center, Mar 2019

3. Derived Geometry and Higher Categorical Structures in Geometry and Physics, Fields Institute, Jun 2018

2. Graduate Workshop in Algebraic Geometry for Women and Mathematicians of Minority Genders, Harvard and MIT, Feb 2018

1. RTG Workshop on the Geometry and Physics of Higgs bundles II, UIC, Nov 2017

ACADEMIC ACTIVITIES

8. **Sonia Kovalevsky day Volunteer**, UIC   2017–
7. **Pure Math Club Co-VP**, Waterloo   Winter 2017
6. **Volunteer Tutor**, Tutoring Beyond Borders   Winter 2017
5. **Women in Computer Science**, Waterloo   Fall 2015
4. **Orientation Black Tie Leader**, Waterloo,   Sept 2014
3. **MathSoc Website Board**, Waterloo   Fall 2013
2. **Volunteer Translator**, Global Voices   2011 − 2013
1. **Volunteer Tutor**, JUMP Math at Branksome Hall   2010 − 2011

EMPLOYMENT

Software Engineer Intern, Amazon Lab 126   Summer 2015

Software Engineer Intern, Evertz Microsystems   Summer 2014

Junior Developer Intern, PureFacts Financial Solutions   Summer 2013

RELEVANT SKILLS

Languages: English, Mandarin, Spanish (Intermediate)

Programmed in: C/C++, Java, Maple, MATLAB, PARI/GP, SageMath, Scala, etc.

Last updated: October 27, 2021