

# Mengxue Yang

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## EDUCATION

**University of Heidelberg**, Germany  
Visiting scholar

expected Feb 2022 – Aug 2022

**University of Illinois at Chicago**, USA  
Ph.D. Candidate in Mathematics  
Thesis: Generalized opers (in progress)  
Advisor: Laura Schaposnik

2017 – expected Jan 13, 2022

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

2012 – 2017

## 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](https://doi.org/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](https://doi.org/10.1007/s10455-021-09783-4)

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

## TEACHING EXPERIENCE

### Instructor, UIC

MATH 104 Mathematical Reasoning Workshop  
Young Scholar Program at UIC  
MATH 077 Mathematical Reasoning Workshop  
Summer Enrichment Workshop for College Algebra  
MATH 179 Emerging Scholars Workshop for Calculus I

Fall 2021  
Summer 2021  
Spring 2021  
Summer 2020  
Fall 2019

### Teaching Assistant, UIC

MATH 105 Mathematical Reasoning  
MATH 210 Calculus III  
MATH 125 Linear Algebra for Business  
MATH 180 Calculus I  
MATH 165 Calculus for Business  
MATH 118 Mathematical Reasoning  
MATH 181 Calculus II

Fall 2021  
Fall 2020  
Spring 2020  
Fall 2019  
Spring 2019  
Fall 2018  
Summer 2018

MATH 180 Calculus I	Spring 2018
MATH 180 Calculus I	Fall 2017
<b>Grader, UIC</b>	
MATH 414 Real Analysis II	Spring 2021
<b>Instructional Support Assistant, Waterloo</b>	
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 Teichmüller 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

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

## EMPLOYMENT

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| <b>Software Engineer Intern</b> , Amazon Lab 126               | Summer 2015 |
| <b>Software Engineer Intern</b> , Evertz Microsystems          | Summer 2014 |
| <b>Junior Developer Intern</b> , PureFacts Financial Solutions | Summer 2013 |

## RELEVANT SKILLS

Languages: English, Mandarin, Spanish (Intermediate)

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