Mingjia Yang

Curriculum Vitae

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Education

2013–2020 **PhD in Mathematics**, *Rutgers University*, New Brunswick, New Jersey.
Advisor: Doron Zeilberger

2009–2013 **BA in Mathematics**, *Albion College*, Albion, Michigan.
Phi Beta Kappa, Summa Cum Laude, Sigma Xi

Study Abroad

2011–2012 **Budapest Semesters in Mathematics**, Budapest, Hungary.
High honors during the spring semester

Research Interests

I study experimental mathematics and discrete math, I am especially interested in integer partitions and patterns in permutations and words.

Teaching

Courses for which I was the instructor

- Multivariable Calculus — MTH 251 - Summer 2019
- Introductory Linear Algebra — MTH 250 - Summer 2016

Courses for which I was a teaching assistant

- Introductory Linear Algebra — MTH 250 - Spring 2019
- Differential Equations for Engineering and Physics — MTH 244 - Fall 2018
- Calculus II for the Mathematical and Physical Sciences — MTH 152 - Spring 2018
- Multivariable Calculus — MTH 251 - Fall 2017
- Calculus II for the Mathematical and Physical Sciences (Honors) — MTH 152H - Spring 2016
- Differential Equations for Engineering and Physics — MTH 244 - Fall 2015
- Calculus I — MTH 135 - Fall 2014 - Spring 2015

Papers

[1] Mingjia Yang. Enumeration of words that contain the pattern 123 exactly once, Ann. Comb. 23 (2019) 207–217. `https://link.springer.com/article/10.1007/s00026-019-00416-z`

[2] Mingjia Yang, Doron Zeilberger. Increasing Consecutive Patterns in Words, J. Algebr. Comb. (2019). `https://link.springer.com/article/10.1007/s10801-018-0868-5`

Ongoing projects

[3] Relaxed partitions `http://sites.math.rutgers.edu/~my237/RP`

[4] Systematic counting of restricted partitions `http://sites.math.rutgers.edu/~zeilberg/mamarim/mamarimhtml/rpr.html`

[5] Searching for new partition identities. In progress.

Awards

2019 **Excellence Fellowship for Dissertation Work**, *Rutgers University*.

2013-2014 **Janice Pattwell Annual Mathematics Fellowship**, *Rutgers University*.

2013-2014 **SAS Excellence Fellowship**, *Rutgers University*.

2010 **Putnam Competition**, *39 points, 342.5th place among 4296 participants.*

2010 **Lower Michigan Math Competition**, *won trophy with my team.*

2009-2013 **Roscoe Sleight four-year Scholarship**, *Albion College*.

Conference talks

January 2020 **Increasing consecutive patterns in words**, *JMM - Special Session on Sequences, Words, and Automata* , Denver, CO -*Invited*.

November 2019 **Systematic counting of pattern-avoiding partitions**, *AMS Fall Southeastern Sectional - Special Session on Partition Theory and Related Topics*, Gainesville, FL -*Invited*.

April 2019 **Relaxed partitions**, *Graduate student combinatorics conference*, Philadelphia, PA.

March 2019 **Relaxed partitions**, *AMS Spring Southeastern Sectional - Special Session on Experimental Mathematics in Number Theory, Analysis, and Combinatorics*, Auburn, AL -*Invited*.

Service and outreach

2018-present **Coorganizer of the Experimental Math Seminar**, *Rutgers University*.

2017-present **Vice president for Graduate Student Chapter of AMS**, *Rutgers University*.

Summer 2019 **Directed Reading Program mentor**, *Rutgers University*.
Naive Set Theory

Summer 2017, 2019 **Discussion Leader at International TA Orientation**, *Rutgers University*.

Spring 2014 **North Jersey Regional Science Fair Judge**.

Undergraduate research projects

Summer 2012 **REU**, *Geometry, Topology and Complexity of Virtual Knots*, Boise State University.
Presented our results at AAAS Pacific Division Conference.

Summer 2010 **Research assistant for a computer science professor**, *Developing a Framework for Algorithmically Constructing Tilings of the Plane*, Albion College.

Memberships

American Mathematical Society

Association for Women in Mathematics

Computer & data & design skills

programming Languages: proficient in Maple, some Java, Python, R, HTML
Tools and Software: Tableau, LaTeX
Some computer science/data science courses: design and analysis of algorithms, machine learning for data science, informaton visualization and presentation
Certificate: Foundations of Design Thinking (IDEO U)