

## Junxian Li

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CONTACT INFORMATION	Max Planck Institute for Mathematics Vivatsgasse 7, 53111 Bonn Germany	jli135@mpim-bonn.mpg.de <a href="https://jligit.github.io/">https://jligit.github.io/</a>
RESEARCH INTERESTS	$L$ -functions, Primes, Exponential sums, Additive Combinatorics Automorphic Forms	
EMPLOYMENT	Max Planck Institute for Mathematics Mentors: Valentin Blomer and Pieter Moree	Sept 2019–
	Georg-August Universität Göttingen Mentors: Valentin Blomer and Harald Helfgott	Sept 2018–Aug 2019
EDUCATION	University of Illinois at Urbana-Champaign Ph.D. in Mathematics Advisor: Alexandru Zaharescu	Sept 2013–Aug 2018
	Nanjing University B. A. in Mathematics	Sept 2009–Aug 2013
PUBLICATIONS	<ol style="list-style-type: none"><li>1. Zeros of a family of approximations of Hecke <math>L</math>-functions associated with cusp forms (with A. Roy and A. Zaharescu), <i>Ramanujan J.</i> 41(1-3): 391–419, 2016.</li><li>2. Smooth <math>L^2</math> distances and zeros of approximations of Dedekind zeta functions (with M. Nastasescu, A. Roy, and A. Zaharescu), <i>Manuscripta Math.</i> 154(1-2): 195–223, 2017.</li><li>3. A lower bound for the least prime in an arithmetic progression (with K. Pratt and G. Shakan), <i>Q. J. Math.</i>, 68(3): 729–758, 2017.</li><li>4. Exact evaluation of second moments associated with some families of curves over a finite field (with R. Donepudi and A. Zaharescu), <i>Finite Fields Appl.</i> 48: 331–355, 2017.</li><li>5. On distinct consecutive <math>r</math>-differences (with G. Shakan), <i>J. Number Theory</i> 199: 363–376, 2019.</li><li>6. A local Benford Law for a class of arithmetic sequences (with Z. Cai and A. J. Hildebrand), <i>Int. J. Number Theory</i> 15(3): 613–638, 2019.</li><li>7. Value distribution of <math>L'(\rho)</math> (with A. Zaharescu), <i>J. Math. Anal. Appl.</i> 480(1): 123400, 24 pp, 2019.</li><li>8. Leading Digits of Mersenne Numbers (with Z. Cai, M Faust, A. J. Hildebrand, and Y. Zhang), <i>Exp. Math.</i> 1-17, 2019.</li><li>9. Almost Beatty Partitions (with A. J. Hildebrand, X. Li, and Y. Xie), <i>J. Integer Seq.</i> 22(4): Art. 19.4.6, 34 pp, 2019.</li><li>10. The final problem: an identity from Ramanujan’s lost notebook (with B. Berndt and A.</li></ol>	

Zaharescu), *J. Lond. Math. Soc.* 100(2): 568–591, 2019.

11. A binary quadratic Titchmarsh divisor problem *Acta Arithmetica* 192(4): 341–361, 2020.

12. Ducci iterates and similar ordering on sets of visible points (with A. Tamazyan and A. Zaharescu), *Int. J. Number Theory* 16(1): 1–28, 2020.

13. The surprising accuracy of Benford’s law in mathematics (with Z. Cai, M. Faust, A. J. Hildebrand and Y. Zhang), *Amer. Math. Monthly* 127(3): 217–237, 2020.

14. Large values of Dirichlet  $L$ -functions at zeros of a class of  $L$ -functions *Canad. J. Math.* to appear.

15. Lower bounds for discrete negative moments of the Riemann zeta function (with W. Heap and J. Zhao), arXiv:2003.09368.

16. Uniform Titchmarsh divisor problems (with E. Assing and V. Blomer), arXiv:2005.13915.

17. Joint value distribution of  $L$ -functions on the critical line (with S. Inoue), arXiv:2102.12724.

#### CONFERENCE PROCEEDINGS

1. On primes in arithmetic progressions Automorphic forms and related topics, 165–167, *Contemp. Math.* 732, Amer. Math. Soc., Providence, RI, 2019

2. The Final Problem: A Series Identity from the Lost Notebook (with B. C. Bruce and A. Zaharescu), *George E. Andrews 80 Years of Combinatory Analysis*, K. Alladi, B. C. Berndt, P. Paule, J. Sellers, and A. J. Yee, eds., Birkhäuser, 783–790, 2021.

#### HONORS AND AWARDS

Bateman Fellowship in Number Theory Spring 2018

On the List of Teachers Ranked as Excellent by their Students Fall 2017

#### TEACHING EXPERIENCE

Math 415 Linear Algebra, Instructor UIUC, Fall 2017

Math 415 Linear Algebra, Instructor UIUC, Spring 2017

Math 231 Calculus II, Instructor UIUC, Spring 2016

Math 241 Calculus III, Instructor UIUC, Fall 2016

Math 241 Calculus III, Instructor UIUC, Spring 2015

#### UNDERGRADUATE MENTORING

□ Illinois Geometry Lab Graduate Student Mentor

• Almost Beatty Partitions Fall 2018

• Beatty sequences, and Partitions of the Integers Spring 2018

• Chaotic maps and exotic number systems Fall 2017

• Finding integers in group orbits Spring 2017

• Local Benford’s Law Fall 2016

• Leading digit distribution Spring 2016

• Random Walk in number theory Fall 2015

• Fractals, Patterns and Randomness in Number Theory Spring 2015

• Fourier Series with Number theoretic coefficients Fall 2014

• Symmetry in Nature Spring 2014

#### PROFESSIONAL SERVICES

□ Organizer of AMS Special Session at the Joint Mathematics Meeting 2019

• Number Theoretic Methods in Hyperbolic Geometry

□ Organizer of Graduate Student Number Theory Seminar in UIUC 2016–2018

□ Referee:

- J. Number Theory
- Math. Reports
- Rev. Roumaine Math. Pures Appl.
- J. Math. Sci. Adv. Appl.

CONFERENCES  
AND SEMINAR  
TALKS

- Uniform Titchmarsh Divisor Problems  
Japan Europe Number Theory Exchange Seminar. Jan 2021
- Joint Value Distribution of  $L$ -functions.  
Oberseminar Analytic Number Theory, Bonn(online). Nov 2020
- Derivative of the Riemann zeta function at its zeros.  
Analytic Number Theory Meeting, IHP (online). Jun 2020
- Extreme values of  $L$ -functions  
Number theory lunch seminar, MPIM. Oct 2019
- Extreme values of  $L$ -functions  
Oberseminar analytic number theory, Georg-August Universität Göttingen. Nov 2018
- The Unreasonable Effectiveness of Benford's Law in Mathematics  
Joint with A. J. Hildebrand, Number Theory Seminar, UIUC. Apr 2018
- Primes in arithmetic progressions  
Junior Mathematics Colloquium, Georg-August Universität Göttingen. Dec 2017
- Randomness in Number Theory  
Graduate Student Colloquium, UIUC. Nov 2017
- Primes in arithmetic progressions  
Where Geometry meets Number Theory, a conference in honor of  
the 60th birthday of Per Salberger, Gothenburg. July 2017
- The least prime in an arithmetic progression  
Joint Mathematics Meeting, Atlanta. Jan 2017
- On the least prime in an arithmetic progression  
Number Theory Seminar, UIUC. Sept 2016
- A lower bound on the least prime in an arithmetic progression,  
Workshop on Automorphic Forms and Related Topics, Sarajevo . Jul 2016
- Approximations of  $L$ -functions  
2015 Midwest Number Theory Conference for Graduate Students  
and Recent Ph. D's. Oct 2015
- Approximations of  $L$ -functions  
Graduate Student Number Theory Seminar, UIUC. Nov 2015
- Bailey Pairs and Bailey chains  
 $q$ -series Seminar, UIUC. Apr 2015
- Basic Hypergeometric functions  
 $q$ -series Seminar, UIUC. Mar 2015

RESEARCH  
EXPERIENCE

- Zeta functions, CIRM Dec 2019
- Second Symposium on Analytic Number Theory, Cetraro July 2019
- Rational points on irrational varieties, IHP June 2019
- $L$ -functions and Multiplicative Number Theory, U of Mississippi May 2019
- Distribution of values of zeta functions and  $L$ -functions, RIKEN Mar 2019
- Workshop and Winter School on Local Statistics of Point Sequences, Linz Feb 2019
- Building Bridges: 4th EU/US Summer School  
and Workshop on Automorphic Forms and Related Topics July 2018
- Hausdorff School:  $L$ -functions: Open Problems and Current Methods June 2018
- MRC: Number Theoretic Methods in Hyperbolic Geometry June 2018
- Probability in Number Theory May 2018
- Arbeitsgemeinschaft in Oberwolfach Oct 2017
- MSRI Summer Graduate School on Automorphic Forms

	and the Langlands Program	Aug 2017
	<input type="checkbox"/> PCMI Graduate Summer School on random matrices	June 2017
	<input type="checkbox"/> University of Houston Summer School on Dynamical Systems	May 2017
	<input type="checkbox"/> MSRI: Analytic Number Theory	Jan, May 2017
	<input type="checkbox"/> West Coast Algebraic Topology Summer School	Aug 2016
	<input type="checkbox"/> Building Bridges: 3rd EU/US Summer School and workshop on Automorphic Forms	July 2016
	<input type="checkbox"/> UNCG Summer School in Computational Number Theory	June 2016
	<input type="checkbox"/> Houston Summer School on Dynamical Systems	May 2016
	<input type="checkbox"/> UNCG Summer School in Computational Number Theory	May 2015
	<input type="checkbox"/> Exchange in University of Wisconsin-Madison	Fall 2012
OUTREACH ACTIVITIES	<input type="checkbox"/> Four Color Fest	Nov 1-4 2017
	<input type="checkbox"/> A Math Carnival at Illinois-Gathering for Gardener	Jan 28 2017
	<input type="checkbox"/> Science at the Market	Aug 2013
SKILLS	Programming: C++, Mathematica, Matlab, Python	
	Languages: English, Chinese	