

# Mengzhen (August) Liu

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EDUCATION	<b>PhD in Mathematics</b> , Harvard University, MA, US In progress. Expected finish: May 2028	Sep 2023 - Current
	<b>Master of Mathematics</b> , University of Cambridge, UK Honours pass with distinction.	Sep 2022 - June 2023
	<b>BA in Mathematics</b> , University of Cambridge, UK First class honours and ranked within top 5 in all years. Final mark: 100/100.	Sep 2018 - Jun 2022
EXPERIENCE	<b>Research in the CMS</b> , Cambridge, UK • Conducted research in number theory supervised by Prof. Tom Fisher.	Summer 2022
	<b>Polymath Jr.</b> , US (Online) • Conducted research in analytic number theory supervised by Dr. Ezra Waxman and Prof. Steven Miller.	Summer 2021
	<b>Budapest Semesters in Mathematics</b> , Online • Took Conjecture and Proof, Discrete and Convex Geometry. Achieved A+ in both. • Conducted research in number theory and combinatorics supervised by Prof. Tamás Keleti.	Sep 2020 - Aug 2021
	<b>Math in Moscow</b> , Online • Took Topology I, Advanced Algebra, Complex Analysis, Algebraic Number Theory, Basic Representation Theory and achieved A+ or A in all.	Jan 2021 - Jun 2021
	<b>Fields Undergraduate Summer Research Program</b> , Toronto, Canada (Online) • Conducted research in algebraic combinatorics supervised by Prof. Ada Chan and Dr. Hanmeng Zhan.	Summer 2020
	<b>Budapest Semesters in Mathematics</b> , Budapest, Hungary • Took Graph Theory and Advanced Combinatorics, and achieved A+ in both. • Conducted research in analytic number theory supervised by Prof. Maga Péter.	Summer 2019
	<b>Ross Mathematics Program</b> , OH, US • Program in number theory.	Summer 2018
PUBLICATIONS	<b>Minimisation of 2-coverings of genus 2 Jacobians</b> • With Tom Fisher. Preprint.	2023
	<b>A Hardy-Littlewood conjecture for Artin primes</b> • With Ezra Waxman. Preprint.	2023
	<b>Tiling of rectangles with squares via Diophantine approximation</b> • With Tamás Keleti, Stephen Lacina, Changshuo Liu and José Ramón Tuirán Rangel. <i>Discrete Mathematics</i> , Volume 346, Issue 9 (2023).	2022
	<b>Laplacian pretty good fractional revival</b> • With Ada Chan, Bobae Johnson, Malena Schmidt, Zhanghan Yin and Hanmeng Zhan. <i>Discrete Mathematics</i> , Volume 345, Issue 10.	2021

- Laplacian fractional revival on graphs** 2020
- With Ada Chan, Bobae Johnson, Malena Schmidt, Zhanghan Yin and Hanmeng Zhan. *The Electronic Journal of Combinatorics*, Volume 28, Issue 3 (2021), P3.22.
- Explicit Burgess bound for composite moduli** 2020
- With Niraek Jain-Sharma, Tanmay Khale. *International Journal of Number Theory*, Vol. 17, No. 10, pp. 2207-2219 (2021).

## AWARDS AND PRIZES

- Wylie Prize for Mathematics** and **Election to scholarship**, Trinity Hall, University of Cambridge Jun 2022
- For outstanding results in year-end examination, ranking 4th out of 243.
- Election to scholarship**, Trinity Hall, University of Cambridge Jun 2019
- For outstanding results in year-end examination, ranking 3rd out of 232.