# Curriculum Vitae

Akash Singha Roy

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## Education

**August 2022-July 2025:** University of Georgia, PhD in mathematics.
*Advisor:* Paul Pollack *Degree conferral date:* 4 August 2025

**September 2021-April 2022:** Université de Montréal.

**August 2018-April 2021:** Chennai Mathematical Institute, Bachelor of Science in Mathematics and Computer Science. (*Degree conferral date:* 30 July 2021)

## Current Position

**December 2025+:** Postdoctoral Researcher at Charles University (Univerzita Karlova), in the number theory group UFOCLAN under the Department of Algebra.

## Research Interests

Number Theory: Elementary, Analytic, Combinatorial, and Probabilistic Number Theory.

- Distributions of arithmetic functions: Value distributions in residue classes, Benford's Law (Benford behavior of sequences), Erdős–Kac theorem and extensions etc.
- Multiplicative Number Theory: Mean values of multiplicative functions and mean values along arithmetic progressions.
- Anatomy of integers and sieve theory.
- Distributions of primes: Residue races and Chebyshev's bias.
- Interface of number theory with ergodic theory and additive combinatorics.
- Modular forms and $L$-functions.

## Manuscripts organized by chronology of completion

### Book

1. Steps into Analytic Number Theory: A Problem-Based Introduction (with Paul Pollack), ***Springer, Problem Books in Mathematics*** 2021.

### Undergraduate research (January–July 2021)

2. Distribution mod $p$ of Euler's totient and the sum of proper divisors (with Noah Lebowitz-Lockard and Paul Pollack), ***Michigan Mathematical Journal*** 74 (2024), 143–166.
   Links to manuscript: Journal version    Arxiv version

3. Joint distribution in residue classes of polynomial-like multiplicative functions (with Paul Pollack), ***Acta Arithmetica*** 202 (2022), 89–104.
   Links to manuscript: Journal version    Arxiv version

4. Powerfree sums of proper divisors (with Paul Pollack), ***Colloquium Mathematicum*** 168 (2022), 287–295.
   Links to manuscript: Journal version    Arxiv version

5. Dirichlet, Sierpiński, and Benford (with Paul Pollack), ***Journal of Number Theory*** 239 (2022), 352–364.
   Link to manuscript: Journal version

### Graduate research (March 2022–July 2025)

6. Benford behavior and distribution in residue classes of large prime factors (with Paul Pollack), ***Canadian Mathematical Bulletin*** 66 (2023), 626–642.
   Link to manuscript: Journal version

7. On Benford's Law for multiplicative functions (with Vorrapan Chandee, Xiannan Li, and Paul Pollack), ***Proceedings of the American Mathematical Society*** 151 (2023), 4607–4619.
   Links to manuscript: Journal version    Arxiv version

8. Distribution in coprime residue classes of polynomially-defined multiplicative functions (with Paul Pollack), ***Mathematische Zeitschrift*** 303 (2023), no. 4, paper 93, 20 pages.
   Links to manuscript: Journal version    Arxiv version

9. Intermediate prime factors in specified subsets (with Nathan McNew and Paul Pollack), ***Monatshefte für Mathematik*** 202 (2023), 837–855.
   Link to manuscript: Journal version

10. The distribution of intermediate prime factors (with Nathan McNew and Paul Pollack), ***Illinois Journal of Mathematics*** 68 (2024), no. 3, 537–576.
    Links to manuscript: Journal version    Arxiv version

11. Mean values of multiplicative functions and applications to residue-class distribution (with Paul Pollack), ***Proceedings of the Edinburgh Mathematical Society*** 68 (2025), no. 3, 712–730.
    Link to manuscript: Journal version    Full text

12. Anatomical mean value bounds on multiplicative functions and the distribution of the sum of divisors, ***Michigan Mathematical Journal***, accepted for publication.
    Link to manuscript: Most recent version

13. Joint distribution in residue classes of families of polynomially-defined additive functions
    ***Under consideration for publication in Mathematische Zeitschrift***.
    Link to manuscript: Most recent version

14. Joint distribution in residue classes of families of polynomially-defined multiplicative functions
    Link to older (thesis) version
    *This is an older version of the manuscript; it was used in my PhD thesis. A completely rewritten and improved version can be found in the postdoctoral research subsection below.*

15. Joint distribution in residue classes of families of polynomially-defined multiplicative functions II
Link to older (thesis) version
*This is an older version of the manuscript; it was used in my PhD thesis. A completely rewritten and improved version can be found in the postdoctoral research subsection below.*

### PhD thesis

*Dissertation title:* Residue–class distribution of arithmetic functions to varying moduli
*Advisor:* Paul Pollack
*Committee members:* Neil Lyall, Akos Magyar, Giorgis Petridis
Link to dissertation

### Postdoctoral research (November 2025+)

14. Joint distribution in residue classes of families of multiplicative functions I, *Submitted*
*This is a completely rewritten version of Manuscript 14 in the graduate research subsection above. This immensely simplifies the arguments and establishes more general results.*
**Link to manuscript:** Most recent version

15. Joint distribution in residue classes of families of multiplicative functions II, *Submitted*
*This is a completely rewritten version of Manuscript 15 in the graduate research subsection above. This immensely simplifies the arguments and establishes more general results.*
**Link to manuscript:** *Coming soon*

16. The Landau-Selberg-Delange method for products of Dirichlet $L$-functions, and applications, I, *Submitted.*
**Link to manuscript:** Most recent version

17. The Furstenberg-Sárközy theorem for sums of an even number of odd powers (with Alexandros Kalogirou, Andrew Lott, and Akos Magyar), *Completed manuscript; public version will be available soon.*

### Forthcoming manuscripts

18. The Landau-Selberg-Delange method for products of Dirichlet $L$-functions, and applications, II.

19. Joint distribution in residue classes of hybrid families of additive and multiplicative functions.

20. Mean values of multiplicative functions in generalized progressions.

## Recent research awards

- Graduate Student Excellence-in-Research Award (2026), University of Georgia: University-wide award "recognizing the highest level of doctoral research achievement and scholarly impact". Awarded to a small number of graduate students annually across all disciplines; awarded to a Mathematics graduate student four times since its inception in 1999 (including 2026).

  General information about award
  Recipients of the award from the Department of Mathematics, University of Georgia

- William Armor Wills Memorial Scholarship Award (2024), University of Georgia: Departmental award presented annually to one or two PhD students "in recognition of excellence in research".

## Top five manuscripts among works done so far (strongest first)

**Paper 16.** The Landau-Selberg-Delange method for products of Dirichlet $L$-functions, and applications, I. *Submitted.* Most recent version

**Abstract:** The Landau–Selberg–Delange "LSD" method gives precise asymptotic formulas for the partial sums $\sum_{n\le x} a_n$ of a Dirichlet series $\sum_n a_n/n^s$ that behaves like a complex power of the Riemann zeta function. However, situations often arise when the Dirichlet series behaves like a product of complex powers of several Dirichlet $L$–functions to a modulus $q$. In such situations, one often requires sharp asymptotic formulas for the partial sums $\sum_{n\le x} a_n$ that apply in much wider ranges of $q$ than permitted by known forms of the LSD method. In this manuscript, we address this problem, giving new estimates on $\sum_{n\le x} a_n$ in ranges of $q$ that are (in most applications) much wider than attainable from previous results. Our results also weaken certain hypotheses on the size of $\{a_n\}_n$. As applications of our main theorems, we extend Landau's classical results on the distribution of integers with prime factors restricted to progressions, and improve upon Chang, Martin and Nguyen's work on the distributions of the least invariant factors and least primary factors of unit groups. We also study how often a multiplicative function $f : \mathbb{Z}^+ \to \mathbb{Z}$ takes values coprime to an integer $q$, allowing $q$ to vary in a wide range and extending previously known results on this problem. Last but not least, we extend the classical Sathe–Selberg theorems, and study the local laws of the functions $\Omega_a(n)$ and $\omega_a(n)$, that count (with and without multiplicity, respectively), the number of prime divisors of $n$ lying in the coprime residue class $a$ mod $q$.

**Paper 14.** Joint distribution in residue classes of families of multiplicative functions I. *Submitted.* Most recent version

**Abstract:** We study the joint distribution of families of multiplicative functions in residue classes, allowing the moduli to vary within a wide range and assuming some natural control on the average behavior of the functions at (some fixed power of) the primes. As applications, we obtain essentially best possible analogues of the Siegel–Walfisz theorem for families of multiplicative functions that can be controlled by polynomials at some powers of primes. (This class includes several interesting arithmetic functions such as Euler's totient $\varphi(n)$, the sum-of-divisors $\sigma(n)$, and more generally, the sum-of-divisor-powers $\sigma_r(n) := \sum_{d\mid n} d^r$, and so on.) Our results (optimally) extend works of Narkiewicz, Rayner, Śliwa, Dobrowolski, Fomenko and others. One of the main ideas behind our arguments is the detection of a certain "mixing" (or "quantitative ergodicity") phenomenon via methods from sieve theory and the anatomy of integers. Additionally, we combine ideas and machinery from classical analytic number theory, character sums, linear algebra over rings, as well as arithmetic and algebraic geometry.

**Paper 13.** Joint distribution in residue classes of families of polynomially-defined additive functions ***Under consideration for publication in Mathematische Zeitschrift.*** Most recent version

**Abstract:** Let $g_1, \dots, g_M$ be additive functions for which there exist nonconstant polynomials $G_1, \dots, G_M$ satisfying $g_i(p) = G_i(p)$ for all primes $p$ and all $i \in \{1, \dots, M\}$. Under fairly general and nearly optimal hypotheses, we show that the functions $g_1, \dots, g_M$ are jointly equidistributed among the residue classes to moduli $q$ varying uniformly up to a fixed but arbitrary power of $\log x$. Thus, we obtain analogues of the Siegel-Walfisz Theorem for primes in arithmetic progressions, but with primes replaced by values of such additive functions. Our results partially extend work of Delange from fixed moduli to varying moduli, and also generalize recent work done for a single additive function.

**Paper 12.** Anatomical mean value bounds on multiplicative functions and the distribution of the sum of divisors, ***Michigan Mathematical Journal***, accepted for publication. Most recent version

**Abstract:** By suitably combining ideas from the "anatomy of integers" with methods from classical analytic number theory, we establish a new bound on mean values of multiplicative functions under very natural and general hypotheses. This appears to be one of the first results of its kind as it is able to detect crucial savings missed in known results in the literature, whilst being highly uniform in its parameters and containing only

flexible error terms that can be bounded easily in applications. Using this result, we study the distribution of the sum-of-divisors function $\sigma(n)$ in coprime residue classes to moduli $q \le (\log x)^K$, extending results of Śliwa (who had studied this problem for fixed moduli) and obtaining essentially best possible qualitative and quantitative analogues of the Siegel–Walfisz theorem for primes in progressions, with primes replaced by values of $\sigma(n)$. We are able to obtain precise asymptotics for how often $\sigma(n)$ lands in a given coprime residue class mod $q$, which are uniform in a wide range of $q$ and optimal in the error term, the arithmetic restrictions on $q$ and various other parameters. As a consequence of our results, we establish that the values of $\sigma(n)$ sampled over $n \le x$ with $\sigma(n)$ coprime to $q$ are asymptotically "weakly equidistributed" (i.e., uniformly distributed among the coprime residue classes) mod $q$, uniformly for odd $q \le (\log x)^K$. On the other hand, if $q$ is even and not divisible by 3, then weak equidistribution is possible only when we restrict to inputs $n$ having six (or for squarefree $q$, four) prime factors exceeding $q$.

**Paper 10.** The distribution of intermediate prime factors (with Nathan McNew and Paul Pollack), ***Illinois Journal of Mathematics*** 68 (2024), no. 3, 537–576. Journal version Arxiv version

**Abstract:** Let $P^{(\frac{1}{2})}(n)$ denote the middle prime factor of $n$ (taking into account multiplicity). More generally, one can consider, for any $\alpha \in (0,1)$, the $\alpha$-positioned prime factor of $n$, $P^{(\alpha)}(n)$. It has previously been shown that $\log\log P^{(\alpha)}(n)$ has normal order $\alpha \log\log x$, and its values follow a Gaussian distribution around this value. We extend this work by obtaining an asymptotic formula for the count of $n \le x$ for which $P^{(\alpha)}(n) = p$, for primes $p$ in a wide range up to $x$. We give several applications of these results, including an exploration of the geometric mean of the middle prime factors, for which we find that $\frac{1}{x}\sum_{1<n\le x} \log P^{(\frac{1}{2})}(n) \sim A(\log x)^{\varphi-1}$, where $\varphi$ is the golden ratio, and $A$ is an explicit constant. Along the way, we obtain an extension of Lichtman's recent work on the "dissected" Mertens' theorem sums $\sum_{\substack{P^+(n)\le y \\ \Omega(n)=k}} \frac{1}{n}$ for large values of $k$.

## Selected ongoing projects

**1.** Joint normality of the number of prime divisors, the sum of proper divisors and the Alladi–Erdős function (with Paul Pollack and Lee Troupe).

**Project description:** In what is considered to be the birth of probabilistic number theory, Paul Erdős and Mark Kac established the groundbreaking "Erdős–Kac" theorem, which basically states that the function $\omega(n)$ (that counts the number of prime divisors of $n$) can be thought of as a *normally distributed random variable* with mean and variance both equal to $\log\log n$. Two related and well–known arithmetic functions are the "sum-of-proper-divisors" function $s(n) = \sum_{\substack{d \mid n \\ 1 \le d < n}} d$ and the "Alladi–Erdős function" $A(n) = \sum_p p\, v_p(n)$. Pollack and Troupe showed that the function $\omega(s(n))$ satisfies an Erdős–Kac type law; their methods also go through for $\omega(A(n))$. In this project, we try to extend this work and establish a *joint* Erdős–Kac type law for $\omega(n)$, $\omega(s(n))$ and $\omega(A(n))$. For instance, we show that $\omega(n)$ and $\omega(s(n))$ can be thought of as *jointly normally distributed random variables* with mean and variance both equal to $\log\log n$.

**2.** Dual Chebyshev's bias in number fields (with Jiuya Wang).

**Project description:** Numerically, the primes tend to be more biased towards certain residues over others, a phenomenon that was first observed by (and hence named after) Russian mathematician Pafnuty Chebyshev. In their seminal paper, Michael Rubinstein and Peter Sarnak rigorously studied generalizations of this phenomenon, assuming the Generalized Riemann Hypothesis and the Grand Simplicity Hypothesis. They also described extensions of their work to number fields; here, they *fixed the number field, allowed the primes to vary* and looked at the biases in the relative distributions and arithmetic behavior of these varying primes in the (fixed) number field. They found that there are different kinds of biases that can arise and several new analytic complications they bring, but these can all be resolved with some additional care.

In this project, we explore a "dual" version of their work: Suppose we *fix the prime* and allow the *number* *fields to vary.* Would biases still arise or would they get dissolved? What would the biases look like? How would the aforementioned analytic complications show up here? What conditions (if any) would we need on the fixed prime for the biases (if any) to approach some tractable "limiting behavior"?

**3.** Mean values of multiplicative functions in (generalized) progressions.

**Project description:** A well-known problem in analytic number theory is that of studying the *mean values of multiplicative functions along arithmetic progressions*, namely, the problem of estimating the sums $S_f(x,q,a) = \sum_{\substack{1 \le n \le x \\ n \equiv a \bmod q}} f(n)$ for a given multiplicative function $f : \mathbb{N} \to \mathbb{C}$. This problem has connections with the Large Sieve, the Landau–Siegel zeros conjecture, and the Generalized Riemann Hypothesis. Asymptotic formulas on $S_f(x,q,a)$ are known for *small* moduli $q$, but they are useful in highly limited ranges of $q$. In applications, one often requires asymptotics that are valid in *much wider* ranges of $q$ than permitted by known results. In this work, we aim to find such sharp and precise asymptotics on $S_f(x,q,a)$ in these much wider ranges, allowing $q$ to grow rapidly with $x$, and allowing as much flexibility in $f$ as possible. We also investigate the more general sums $\sum_{\substack{1 \le n \le x \\ g(n) \equiv a \pmod q}} f(n)$ for large classes of functions $g : \mathbb{N} \to \mathbb{Z}$.

***More ongoing/upcoming research projects will soon be announced in:***
`https://akashsingharoy.github.io/research`.

### Programming skills and experience with mathematical software

- Have used Sage, Pari/GP, and Macaulay2 as part of research.
- Can also program in C++, Java, Python and Haskell.

## Research Talks and Conferences (Slides available here)

- PAlmetto Number Theory Series (PANTS) XXXVII (December 2023)
  *Distribution in coprime residue classes of Euler's totient and the sum of divisors*
- University of Georgia Number Theory/Arithmetic Geometry Seminar (April 2024)
  *Joint distribution in residue classes of families of "polynomially-defined" multiplicative functions*
- Dartmouth College Algebra and Number Theory Seminar (November 2024)
  *Distribution and mean values of families of multiplicative functions in arithmetic progressions*
- University of Waterloo Number Theory Seminar (January 2025)
  *Residue-class distribution and mean values of multiplicative functions*
- American Mathematical Society (AMS) Spring Eastern Sectional Meeting 2025: Special session on Counting and Asymptotics in Number Theory (April 2025)
  *Distribution in residue classes of families of multiplicative functions*
- INTEGERS Conference 2025 at the University of Georgia: In Honor of the 80th Birthdays of Melvyn Nathanson and Carl Pomerance (May 2025)
  *Joint distribution in residue classes of families of multiplicative functions*
- Combinatorial and Additive Number Theory CANT 2025 (May 2025)
  *Joint distribution in residue classes of families of multiplicative functions*
- ELAZ 2026, Conference on elementary and analytic number theory (February 2026)
  *The Landau-Selberg-Delange method for Dirichlet L-functions, and applications*
- Charles University (Univerzita Karlova) Number Theory Seminar (March 2026)
  *The Landau-Selberg-Delange method for Dirichlet L-functions, and applications*

- Simons School on Discrete Harmonic Analysis and Analytic Number Theory (May 2026)
  *The Landau-Selberg-Delange method for Dirichlet L-functions, and applications*
- FOUVRY 73 (a FOUr-week Voyage thRough analYtic number 7h3ory) Summer School (August 2026). Link to program details
  *The Landau-Selberg-Delange method for Dirichlet L-functions, and applications*
- International Conference on Probability Theory and Number Theory 2026 (September 2026)
- University of Waterloo Number Theory Seminar (March 2027)

## Other awards, grants and scholarships

- Supported by PRIMUS/25/SCI/008 grant from the Charles University, Department of Algebra: December 2025+.
- Travel Grant from the American Mathematical Society (AMS), in partial support for speaking at and participating in the AMS Spring Eastern Sectional Meeting 2025.
- Travel Grant from UGA Graduate School in partial support for speaking at and participating in the AMS Spring Eastern Sectional Meeting 2025.
- UGA Graduate School Dean's Award: April 2023.
- UGA Graduate School Research Assistantship: August 2022 to May 2023.
- UGA Department of Mathematics Teaching Assistantship: August 2023 to May 2025.
- Exemplary Counselor Award at Ross/Asia Mathematics Program 2019:
  "in recognition of outstanding work at the Ross/Asia Mathematics Program".
- Full scholarship and monthly stipend during undergraduate studies at the Chennai Mathematical Institute: August 2018 to April 2021.
- Stipend and Travel Grant from the Ross/Asia Mathematics Program for performing Counselor duties at the program: 2019.
- Full Scholarship and Travel Grant from the Ross Mathematics Program (Columbus, Ohio) for attending the program as Junior Counselor: 2018.
- Mehta Fellowship for attending the Ross Mathematics Program: 2017.
  Highly competitive scholarship for students from India for attending mathematics programs abroad. Pays the full tuition fees, and provides support for travel and lodging expenses.
- Simon Marais Mathematics Competition (SMMC) 2019, International rank (as per score): 15.
  Top quartile. Overall second from Chennai Mathematical Institute in Individual Category.
- Madhava Mathematics Competition 2020 Prize Winner (National rank: 11). Also accepted into Madhava Mathematics Competition camp 2019.
- Indian National Mathematical Olympiad (INMO) 2017 Merit Certificate awardee.
  Regional Mathematical Olympiad (RMO) 2016 and 2017 awardee.
- Enumeration 2020 organized by the Indian Institute of Science (IISc) Bangalore: second prize.
- Scholarship from Camp Euclid for attending the program: 2016.

## Selected list of conferences, seminars, summer schools, workshops and short courses participated in

1. Recent summer schools, workshops and short conferences participated in: FOUVRY 73 summer school; Simons Summer Schools and Workshops at the Renyi Institute (11 May to 12 June 2026); ELAZ 2026; Combinatorial and Additive Number Theory (CANT) 2025; INTEGERS 2025; AMS Spring Eastern Sectional Meeting 2025; Joint Athens–Atlanta Number Theory Seminar Spring 2025; PAlmetto Number Theory Series XXXVII 2023; CANT 2022; Maine-Quebec Number Theory Conference 2021; Chennai-Tirupati Number Theory Conference 2020.
2. Regular participant in the following seminars for the given durations:
   - Number Theory Web Seminar series: May 2020+
   - Charles University (Univerzita Karlova) Number Theory Seminar: December 2025+
   - UGA Mathematics Department Seminars: Number Theory/Arithmetic Geometry Seminars, Oberseminars, and Math Department Colloquia: August 2022 to July 2025. Also participated in UGA Analysis Seminars and Graduate Student Seminars (GSS).
   - Quebec-Vermont Number Theory Seminar (QVNTS) and Montréal Online Biweekly Inter-University Seminar on Analytic Number Theory (MOBIUS ANT) organized by the Centre Interuniversitaire en Calcul Mathématique Algébrique (CICMA): 2021–2022.
   - Institute of Mathematical Sciences (IMSc) Number Theory seminars: 2019–2021.
3. Summer schools, conferences and short courses participated in:
   - Summer school on 'Applications of Expander Graphs to Number Theory and Computer Science': *Conducted by The University of North Carolina at Greensboro (May 2021).*
   - Conference on Analytic and Probabilistic Number Theory commemorating Prof. Ramachandran Balasubramanian's 70th Birthday: *Conducted by the Institute of Mathematical Sciences (IMSc) Chennai (March 2021).*
   - Symposium on Number Theory in honor of Prof. M.V. Subbarao: *Conducted by the Indian Institute of Science Education and Research (IISER) Pune (July 2021).*
   - SPARC Lecture Series on "Algebraic numbers of small height", by Yuri Bilu (March 2021): *Work of Vesselin Dimitrov on the Schinzel-Zassenhaus conjecture.*
   - Short course on "$p$-adic numbers and Diophantine Equations" at the Institute of Mathematical Sciences IMSc (January 2020), instructed by Yuri Bilu.
   - Lecture series on "Effective Andre-Oort on products of modular curves" at the Indian Institute of Technology IIT Madras (February 2020), instructed by Yuri Bilu.

## Other undergraduate research

- *Mahler measures, Lehmer's problem, the Schinzel-Zassenhaus conjecture*: with Sinnou David, IMJ-PRG (2020). Based on works of F. Amoroso, P.E. Blanksby, J. W. S. Cassels, V. Dimitrov, R. Dvornicich, K. Mahler, H. L. Montgomery, A. Schinzel, C. J. Smyth, and H. Zassenhaus.

## Work Experience: Teaching and Service

### Refereeing

Have refereed for the following journals and edited volumes from 2023 onwards:

- Monatshefte für Mathematik.
- Acta Arithmetica
- "Women in Numbers Europe IV: Research Directions in Number Theory", Springer, Association for Women in Mathematics Series.
- Rose–Hulman Undergraduate Mathematics Journal.

### Teaching and Service at Charles University, Prague

- Refereed two Bachelor's theses.
- Instructor for course Arithmetic of Quadratic Forms, Winter 2026–'27.

### Teaching and Service at UGA

- Served on committee for UGA High School Math Tournament 2024
  *Contributed several questions and was involved in the design of the contest.*
- Instructor of MATH 2250 (Calculus I) at UGA: Spring 2024, Fall 2024.
  *Flipped/hybrid classroom structure.*
- Served on committee for design of MATH 2250 final exam at UGA in Spring 2024 (was involved in the design of the exam). Also contributed to MATH 2250 final exam in Fall 2024.
- UGA MATH 2250 Active Learning Working Group: Spring 2024.
- Instructor for MATH 1113 (Precalculus) at UGA: Fall 2023.
  *Flipped classroom structure.*
- Grader for MATH 3100 (Sequences and series): Fall 2023.
  *Instructed by Prof. Paul Pollack*
- UGA Math Study Hall tutor: Spring 2024, Fall 2024, Spring 2025.
- Grader for MATH 4010/6010 (Modern Algebra II): Spring 2025.
  *Instructed by Prof. Nate Harman*
- Grader for MATH 3000 (Introduction to Linear Algebra): Spring 2025.
  *Instructed by Prof. Joseph H. G. Fu*

### Teaching and Service prior to UGA

- Counselor in the Ross/Asia Mathematics program 2019, Zhenjiang, China.
  *The Ross Program is a five to six week residential summer math program for high school students, primarily focused on algebra and number theory, – where students are immersed in the process of mathematical discovery via problem–solving. As a Counselor, I mentored the students, helped develop their problem–solving ability and provided detailed feedback on their work. We also discussed interesting research problems, and I gave several informal lectures introducing a variety of undergraduate and graduate–level math topics.*

  Received the "Exemplary Counselor Award" which is given to a selected number of Counselors "in recognition of outstanding work at the Ross/Asia Mathematics Program".

- Served on committee for evaluating applications to the Ross Mathematics Program: 2020, 2021.
- Teaching assistant in the courses Algebra III and Algebra IV at the Chennai Mathematical Institute: 2020–2021.
- Contributed questions to and served as grader for the Scholastic Test for Excellence in Mathematical Sciences (STEMS) conducted by the Chennai Mathematical Institute: 2019.
- Junior Counselor in the Ross Mathematics Program at the Ohio State University: 2018.