

## Education

- Aug 2021 – **B.S. in Mathematics, Minor in Computer Science,**  
May 2025 *University of Illinois at Urbana-Champaign (UIUC), Champaign*
- GPA: 4.0
  - Edmund J. James Scholar, College of Liberal Arts and Sciences
  - Dean's List

## Graduate Courses Taken

- Spring 2023 Abstract Algebra, Real Analysis  
Fall 2023 Differentiable Manifolds, Complex Variables, Analytic Number Theory,  
Homotopy Theory (Reading Course)

## Publications and Presentations

- Oct 2023 *On the Distribution of Primes*, UIUC Analytic Number Theory Course, 3 talks, 90 minutes each  
Aug 2023 *An Introduction to Bordism Homology*, UChicago Math REU, 25 minute talk  
Dec 2022 Alex Jin, Shreyas Singh, Zhuo Zhang, AJ Hildebrand, *On the Continued Fraction Expansion of Almost All Real Numbers*, 17 pp., submitted to *Involve*  
Sep 2022 *Continued Fractions and the Gauss-Kuzmin Distribution*, UIUC Undergraduate Friday Seminar, 60 minute talk  
Aug 2022 *On the Continued Fraction Expansion of Random Real Numbers*, Young Mathematician Conference, 25 minute talk  
Jun 2022 *Hecke Algebras and Kazhdan-Lusztig Polynomials*, UIUC ICLUE Seminar, 120 minute talk

## Research Experiences

- June 2023 – **UChicago Math Summer REU Program,**  
Aug 2023 *Mentors: Peter May & Mark Behrens, UChicago*
- Learned higher algebraic topology and differential topology.
  - Wrote an expository paper on a geometric treatment of bordism homology.
  - Gave a final presentation of the work done in the REU.
- Jan 2023 – **Independent Research Project at Honors Seminar,**  
May 2023 *Mentor: Bruce Reznick, UIUC*
- Defined a special class of primes known as "Z-primes."
  - Studied the properties of Z-primes and their special primitive roots.
  - Wrote a paper and proposed a conjecture about the asymptotic density of such special primitive roots, providing a heuristic argument.
  - Collected numerical data to support the conjecture.

Jan 2022 – **Illinois Geometry Lab Research Project (IGL),**

Dec 2022 *Mentor: AJ Hildebrand, UIUC*

- Studied the Gauss-Kuzmin distribution underlying simple continued fraction expansion of random real numbers.
- Collected data on the distribution of continued fraction digits of  $\pi$ .
- Wrote a paper
- Presented the results of this work at seminars and local and national conferences.

May 2022 – **Representation Theory Summer Program,**

Jul 2022 *Mentor: Alexander Yong, UIUC*

- Learned representation theory of finite groups and related topics in algebraic combinatorics.
- Collaborated with team members to create 60 pages of LaTeX notes on representation theory.
- Gave a 2-hour presentation on Hecke algebras and Kazhdan-Lusztig polynomials.

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## Leadership Experiences

Aug 2022 – **President of the Illinois Geometry Lab Outreach Program, UIUC**

- Present
- Reach out to children and students from local communities and present to them interesting topics in mathematics.
  - Introduce technologies involving math to students, such as 3D printing.
  - Organize various outreach events and social events.
  - Coordinate the work between group members.

Aug 2022 – **James Scholar Mentor, UIUC**

- Dec 2022
- Mentored two first-year James Scholar honors students in mathematics.
  - Organized mentorship meetings, study sessions and Q&A sessions to guide the mentees and help them have a smooth transition to college.
  - Helped the mentees find resources for undergraduate research in mathematics and physical sciences.

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## Skills

Languages Chinese (Native), English (Proficient)

Programming Python (Proficient), C++ (Proficient), Mathematica (Proficient), LaTeX (Proficient), Java (Intermediate)

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## Honors and Awards

Apr 2023 LAS Get Experience Scholarship

Mar 2023 Lewis C. Hack Scholarship

Aug 2021 – Edmund J. James Scholar  
Present