Xingyu Cheng
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Education

University of North Carolina at Chapel Hill **2021—2026 (Expected)**
PhD Mathematics
Advisor: Prakash Belkale

Purdue University, West Lafayette, IN **2017—2021**
BS Mathematics (Honors)
Minors: German, Computer Science

Online

Website: https://www.tigercheng.xyz/
Github: https://github.com/Xyxyxx

Publications

2. **Linking number of monotonic cycles in random book embeddings of complete graphs** (joint with Yasmin Aguillon, Eric Burkholder, Spencer Eddins, Emma Harrell, Kenji Kozai, Elijah Leake, Pedro Morales). *J. Knot Theory Ramif.*. https://www.worldscientific.com/doi/pdf/10.1142/S0218216523500438

1. **The Mean Sum of Squared Linking Numbers of Random Piecewise-Linear Embeddings of K_n** (joint with Yasmin Aguillon, Spencer Eddins, Pedro Morales). *Rose-Hulman Undergrad. Math. J.*. https://scholar.rose-hulman.edu/rhumj/vol24/iss2/3/

Conferences attended

- **MAAGC**, Virginia Commonwealth University, 2023.
- **SLMATH/MSRI Summer School Commutative Algebra and its Interaction with Algebraic Geometry**, Notre Dame University, Summer 2023.
- **Georgia Algebraic Geometry Symposium**, University of Georgia, 2023.
- **Summer 2020 Indiana REU Conference**, Indiana University, 2020.
  Talk given: 'Extensions of the uniform random polygon model' (joint talk with Pedro Morales).

Teaching

Fall 2024

Courses taught:

- Math 152 Business Calculus

Spring 2024
Recitation lead:

- Math 233 Multivariable Calculus

Summer 2023
Course taught:

- Math 118 Aspects of Modern Mathematics

Fall 2022
Course taught:

- Math 110 College Algebra

Recitations lead:

- Math 231H Calculus I Honors
- Math 110L Recitation for College Algebra

Spring 2022
Recitations lead:

- Math 233 Multivariable Calculus

Fall 2021
Recitation lead:

- Math 233 Multivariable Calculus

Service

Graduate Mathematics Associaton Visions Seminar Organizer **2024—2025**
Tea Time Coordinator **2023—2024**

Directed Reading Program
From `https://math.unc.edu/undergraduate/opportunities/`: "The Directed Reading Program (DRP) pairs undergraduate students with graduate student mentors for semester-long independent study projects. It is an opportunity for motivated students to get one-on-one mentorship as they learn about a math topic of their interest but is out of the scope of the courses offered at UNC."

- **Spring 2024:** with Yan Zhu. We are learning number theory from Ireland and Rosen.
- **Fall 2023:** with Paul Hamrick. We went through Reid's *Undergraduate Algebraic Geometry* with a particular focus on the proof of the 27 lines on a cubic.
- **Spring 2023:** with Aryan Kokkanti. 'Foundations of Knot Theory.'
- **Fall 2022:** with Marleigh Purgar-Mcdonald. 'Hilbert Nullstellensatz, Affine Varieties and Ideals.'