Yingmo Zhang

+1 6126183012 | zhang2734@wisc.edu | Madison, Wisconsin

Education

University of Wisconsin-Madison — Madison, Wisconsin
B.S. in Mathematics — *Sept. 2022 – May. 2026*

University of Minnesota-Twin Cities — Minneapolis, Minnesota
B.S. in Mathematics; Transferred Out — *Sept. 2022 – May. 2023*

Research Experience

REU in Geometry and the Dynamical Systems in Geometry — Madison, Wisconsin
Advisor: *Prof. Paul Apisa* — *Summer 2024*

- **Research Topic:** Estimating the size of the Forni Subspace

Direct Study Program and Other Experience

Direct Study/Independent Study — Madison, Wisconsin
Advisor: *Prof. Thierry Laurens* — *May. 2024–Sept. 2024*

- **Material:** *Partial Differential Equations* by Lawrence C. Evans.
- We have covered most of the chapters of the book *Partial Differential Equations* by Lawrence C. Evans, all of which have been chosen by Professor Thierry Laures in order to support further in-depth study of nonlinear wave equations and dispersive partial differential equations or related research.

Direct Study/Independent Study — Madison, Wisconsin
Advisor: *Prof. Paul Apisa* — *May. 2024–Sept. 2024*

- **Material:** *Translation Surfaces and Their Orbit Closures* by Alex Wright .
- Learned about the first three chapters in the material. Including the definitions and properties of translation surfaces, the moduli spaces $\mathcal{M}$ and strata $\mathcal{H}(\kappa)$ of the translation surfaces, the action of $GL(2,\mathbb{R})$ on translation surfaces and their orbit structures, affine invariant sub-manifolds and their 2-dimensional cases related to real multiplication, and the dynamics of straight line flows on translation surfaces and their connections to rational billiards.

Direct Reading Program — Madison, Wisconsin
Ph.D. Mentor: Diego Rojas La Luz — *Feb. 2024 – May.1st 2024*

- **Material:** *Foundations of Chemical Reaction Network Theory* by Martin Feinberg .
- Predominantly, we studied the Deficiency Zero Theorem, Deficiency One Theorem, and the Horn-Jackson Theorem with strict proof offer, and covered the implications of these balancing conditions for the stability and dynamics of chemical reaction networks, including applications like the Star-Like Network Theorem.

COMAP (MCM)
Participant — *Feb 2024*

- We used Agent-based Models (ABMs), Modified Rössler System, The modified Lotka–Volterra model, Chaos Theory, Stochastic Process Equation, Wiener Process, Brownian Motion, Euler–Maruyama method, Milstein Method to finalize an essay about predicting and analyzing between the sex ratio of sea lampreys and local food resources.

Awards & Achievements

Dean's List: Awarded to Bachelor alumni who have term GPA greater than or equal to 3.68 by College of Science and Engineering at **University of Minnesota-Twin Cities**. (Dec 2022, May 2023)

Skills

Languages: SageMath, Python, LaTeX, Mathematica, Microsoft Office

Relevant Coursework

Math coursework: Calculus I&II; Multivariable Calculus; Linear Algebra; Applied Differential Equation; The Theory of Single Variable Calculus (Proof); Probability Theory; Applied Nonlinear Dynamical System, Chaos and Modeling; Differential Geometry; Elementary Topology; Analysis I;