

Zhao, Yuxuan

Email: yuxuanz587@gmail.com | [LinkedIn](#) | [Website](#)

EDUCATION

University of Illinois Urbana-Champaign Urbana IL USA PhD Candidate in Mathematics	Aug 2023 – Present
ShanghaiTech University Shanghai China BS in Mathematics and Applied Mathematics	Aug 2019 – Jul 2023

RESEARCH EXPERIENCE

Doctoral Research University of Illinois Urbana-Champaign Advisor: Prof. Daniel B. Cooney Research Interests: Mathematical Biology, Population Dynamics, PDEs, Dynamical Systems	Jan 2025 – Present
Undergraduate Research ShanghaiTech University Advisor: Prof. Shixiao Jiang Thesis: <i>Some Meshless Methods on Smooth Manifolds</i> Implemented and reproduced meshless numerical methods for solving PDEs on smooth manifolds, including local RBF-FD and local MLS methods.	Dec 2022 – May 2023

PUBLICATIONS AND MANUSCRIPTS

- The Keller–Segel Model for Chemotaxis on Metapopulation Graphs and Graphons (Manuscript in preparation). Zhao, Y., Zhu, K., Zhang, Y., Cooney, D. B. Pattern Formation in a Spatial Public Goods Dilemma due to Diffusive or Directed Motion. <i>Bulletin of Mathematical Biology</i>, accepted for publication, 2026. Preprint: arXiv:2603.21025.	
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RESEARCH MENTORSHIP

IML Project Mentor (Volunteer) University of Illinois Urbana-Champaign Urbana, IL USA - Mentored undergraduate students interested in mathematical research through the Illinois Mathematics Lab (IML). - Designed and supervised small-scale research projects suitable for undergraduate researchers. - Worked under the guidance of faculty instructors Daniel Cooney and Olivia Clifton, serving as the graduate mentor for student research teams.	Jan 2026 – May 2026
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TRAINING PROGRAM

INMAS Training Program University of Illinois Urbana-Champaign Urbana, IL USA - Selected for competitive industrial math & statistics training program. - Applied Python, statistics, and machine learning to interdisciplinary data-driven projects. - Delivered technical presentations to peers and mentors.	Oct 2024 – May 2025
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WORK EXPERIENCE

Teaching Assistant and Grader University of Illinois Urbana-Champaign Urbana, IL USA - Teaching assistant for Calculus I and Calculus III. - Grader for Differential Equations, Machine Learning, Real Analysis, and General Topology.	Aug 2023 – Present
PrairieLearn Summer Intern PrairieLearn, Inc. Urbana, IL USA - Developed Python-based interactive assessment and auto-grading systems using NumPy and SymPy. - Collaborated with a cross-functional team on implementation and deployment.	May 2025 – Aug 2025

SKILLS & INTERESTS

Languages: Fluent in English and Mandarin Chinese	
Technical Skills: Python (NumPy, Pandas, SymPy); MATLAB; $\LaTeX$; Git; Microsoft Suite	
Interests: Hiking, table tennis	