Xinran Yu

University of Illinois at Urbana-Champaign, 1409 W. Green Street, Urbana, IL 61801, USA
xinran4@illinois.edu ◇ +1 (217) 550-2664 ◇ https://xinrany.github.io/home/

Education

University of Illinois at Urbana-Champaign, Illinois 2017–present
Ph.D. in Mathematics
MS in Mathematics, May 2019

University of Liverpool, Liverpool, United Kingdom 2015–2017
BSc in Mathematics (with Honors), June 2017
Thesis: *Analytic Continuation and Riemann Surfaces.* Supervisor: Dr. Jon Woolf.

Xi'an Jiaotong-Liverpool University, Suzhou, China 2013–2015
BSc in Applied Mathematics, June 2017

Teaching & Mentoring

Teaching Assistant, *University of Illinois at Urbana-Champaign* 2019–present

Teaching

Stand-alone Math231 Calculus II, Spring 2022
Discussion Math241 Calculus III, on List of Teachers Ranked as Excellent by Their Students (Fall 2021)
Discussion Math231 Calculus II, on List of Teachers Ranked as Excellent by Their Students (Spring 2021)
Tutor Math286 Introduction to Differential Equation Plus, Fall 2020

Grading

Math402 Non Euclidean Geometry, Fall 2023
Math403 Euclidean Geometry, Fall 2023
Math423 Differential Geometry, Fall 2023
Math518 Differentiable Manifolds I, Fall 2023
Math519 Differentiable Manifolds II, Spring 2023
Math541 Functional Analysis, Spring 2023
Math553 Introduction to Partial Differential Equations, Spring 2023
Math416 Abstract Linear Algebra, Fall 2022
Math512 Abstract Algebraic Geometry, Fall 2022
Math514 Complex Algebraic Geometry, Fall 2022
Math525 Algebraic Topology I, Spring 2021
Math417 Introduction to Abstract Algebra I, Spring 2020
Math418 Introduction to Abstract Algebra II, Spring 2020
Math417 Introduction to Abstract Algebra I, Fall 2019
Math489 Dynamics & Differential Equations, Fall 2019

Graduate Team Leader at Illinois Geometry Lab, *University of Illinois at Urbana-Champaign* Fall 2019
Faculty mentor: Katelyn Leisman.
Project: *Simulating Multi-Soliton Solutions to NLS and KdV and Studying Interactions*

- Our team focused on the nonlinear Schrödinger (NLS) equation with nonzero boundary condition and studied the exact solution of a one-soliton solutions. We compared the solution of those with zero boundary condition, and used Python to generate figures and animations for the solution.

- Duty
  - Held weekly meetings and provided Python and LaTeX supports to the team.
  - Supervised on the mid-semester presentation and the open house event
  - Helped the team to formulate final report.

Talks

The ambient obstruction tensor Feb 2023
Graduate Geometry and Analysis Seminar at UIUC

Introduction to Einstein-Maxwell equations Oct 2022
Graduate Geometric Analysis Seminar at UIUC

The Rrenormalized Volume of Conformally compact Einstein Manifolds Oct 2022
Graduate Geometric Analysis Seminar at UIUC

Einstein Filling on Hyperbolic Ball Feb 2022
Graduate Analysis Seminar at UIUC

The Yamabe Problem Apr 2021
Graduate Geometry and Topology Seminar at UIUC

Honors & Awards

Wills Prize in Mathematics, *University of Liverpool* Jul 2017
Special honor in the examination for the degree of bachelor of science with honors.

IMA Prize, *University of Liverpool* Jul 2017
Outstanding performance in the final year, offered by the Institute of Mathematics and its Applications.

University Academic Achievement Award, *Xi'an Jiaotong-Liverpool University* 2014–2015
Top 10% of the program.

Skills

Python & R

- Attended PI4 Bootcamp and did a project regarding goodreads book analysis.
- Simulated solutions of a Nonlinear Schrödinger Equation and generated graphics for the solutions.

Mathematica

Services & Enrichment

International TA Panel Panelist, *University of Illinois at Urbana Champaign* Aug 2022
Discussing language requirements and how TA practices are different in the US compared to foreign countries.

Staff-Student Liaison Committee Member, *University of Liverpool* 2016–2017
Worked as a course representative. Offered student perspective on the Mathematics department and contributed to improvements of the department.