

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/>

Research Interests

Geometric analysis

In particular • conformal geometry • generalized Einstein metrics on asymptotically hyperbolic spaces
• conic singularities

Education

University of Illinois at Urbana-Champaign , Illinois Ph.D. in Mathematics, expected May 2025 MS in Mathematics, May 2019	2017–present
University of Liverpool , Liverpool, United Kingdom BSc in Mathematics (with Honors), June 2017 Thesis: <i>Analytic Continuation and Riemann Surfaces</i> . Supervisor: Dr. Jon Woolf.	2015–2017
Xi'an Jiaotong-Liverpool University , Suzhou, China BSc in Applied Mathematics, June 2017	2013–2015

Teaching & Mentoring

Teaching Assistant , <i>University of Illinois at Urbana-Champaign</i> Teaching <i>Stand-alone Math231</i> Calculus II, Spring 2022 <i>Discussion Math241</i> Calculus III, on the List of Teachers Ranked as Excellent by Their Students (Fall 2021) <i>Discussion Math231</i> Calculus II, on the List of Teachers Ranked as Excellent by Their Students (Spring 2021) <i>Tutor Math286</i> Introduction to Differential Equation Plus, Fall 2020	2019–present
--	--------------

Grading

Geometry courses

- *Math402* Non Euclidean Geometry • *Math403* Euclidean Geometry • *Math423* Differential Geometry
- *Math518* Differentiable Manifolds I • *Math519* Differentiable Manifolds II • *Math512* Abstract Algebraic Geometry
- *Math514* Complex Algebraic Geometry

Analysis courses

- *Math541* Functional Analysis • *Math553* Introduction to Partial Differential Equations
- *Math489* Dynamics & Differential Equations

Algebra courses

- *Math416* Abstract Linear Algebra • *Math417* Introduction to Abstract Algebra I
- *Math418* Introduction to Abstract Algebra II • *Math417* Introduction to Abstract Algebra I

Topology courses

- *Math525* Algebraic Topology I

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

- 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 L^AT_EX supports to the team.
 - Supervised on the [mid-semester presentation](#) and [the open house event](#)
 - Helped the team to formulate [final report](#).

Talks

The fractional Laplacian through Dirichlet problem formulation Graduate Geometry and Analysis Seminar at UIUC	Feb 2024
Introduction to Lovelock metrics Graduate Geometry and Analysis Seminar at UIUC	Nov 2023
The ambient obstruction tensor Graduate Geometry and Analysis Seminar at UIUC	Feb 2023
Introduction to Einstein-Maxwell equations Graduate Geometric Analysis Seminar at UIUC	Oct 2022
The Rrenormalized Volume of Conformally compact Einstein Manifolds Graduate Geometric Analysis Seminar at UIUC	Oct 2022
Einstein Filling on Hyperbolic Ball Graduate Analysis Seminar at UIUC	Feb 2022
The Yamabe Problem Graduate Geometry and Topology Seminar at UIUC	Apr 2021

Honors & Awards

Ruth V Shaff & Genevie I. Andrews Fellowship , <i>University of Illinois at Urbana-Champaign</i> Mathematics department fellowship	Spring 2024
Wills Prize in Mathematics , <i>University of Liverpool</i> Special honor in the examination for the degree of bachelor of science with honors.	Jul 2017
IMA Prize , <i>University of Liverpool</i> Outstanding performance in the final year, offered by the Institute of Mathematics and its Applications.	Jul 2017
University Academic Achievement Award , <i>Xi'an Jiaotong-Liverpool University</i> Top 10% of the program.	2014–2015

Services & Enrichment

International TA Panel Panelist , <i>University of Illinois at Urbana Champaign</i> Discussing language requirements and how TA practices are different in the US compared to foreign countries.	Aug 2022
Staff-Student Liaison Committee Member , <i>University of Liverpool</i> Worked as a course representative. Offered student perspective on the Mathematics department and contributed to improvements of the department.	2016–2017

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