CV of Kai-Hsiang Wang

CONTACT INFORMATION

Northwestern University
Department of Mathematics
2033 Sheridan Road
Evanston, IL 60208

E-mail: khwang2025@u.northwestern.edu
Website: https://k-hwang.github.io/

RESEARCH INTERESTS

Geometric analysis: geometric inequalities and calculus of variation on Riemannian manifolds; optimal transport, Ricci limit spaces, free boundary problems
Functional analysis: Approximation in RKHS

CURRENT ACADEMIC APPOINTMENTS

Graduate Student, Northwestern University — Sep 2020 to present
Expected degree: PhD — Jun 2025

PREVIOUS ACADEMIC APPOINTMENTS

Research Assistant, NCTS — Aug 2019 to Jan 2020
Under supervision of Prof. Chung Jun Tsai (NTU)

EDUCATION

National Taiwan University (NTU)

B.Sc. in Mathematics — June 2019

PUBLICATIONS

[1] Chung-Jun Tsai and Kai-Hsiang Wang. "An Isoperimetric-Type Inequality for Spacelike Submanifold in the Minkowski Space". In: *International Mathematics Research Notices* 2022.1 (May 2020), pp. 128–139. DOI: 10.1093/imrn/rnaa084.

[2] Erik Hupp, Aaron Naber, and Kai-Hsiang Wang. "Lower Ricci Curvature and Nonexistence of Manifold Structure". arXiv preprint, to appear in Geometry & Topology. 2023. DOI: 10.48550/arXiv.2308.03909.

[3] Dongwei Chen and Kai-Hsiang Wang. "On the Probabilistic Approximation in Reproducing Kernel Hilbert Spaces". arXiv preprint. 2024. DOI: 10.48550/arXiv.2409.11679.

[4] Kai-Hsiang Wang. "Optimal transport approach to Michael–Simon–Sobolev inequalities in manifolds with intermediate Ricci curvature lower bounds". en. In: *Annals of Global Analysis and Geometry* 65.1 (Feb. 2024), p. 7. DOI: 10.1007/s10455-023-09934-9.

Invited Talks

1. **Informal Geometric Analysis Seminar**, Northwestern University, Feb 2023
   Title: Optimal Transport Approach to Michael–Simon–Sobolev Inequalities
2. **Seminar on Differential Geometry**, NCTS, Oct 2023
   Title: Collapsing Ricci Limit Spaces with No Manifold Structure
3. **Seminar on Differential Geometry**, NCTS, Aug 2024
   Title: Introduction to Optimal Transport with Application to Geometric Inequalities

Contributed Talks

1. **PIMS- IFDS- NSF Summer School on Optimal Transport**, University of Washington, Jun 2022
   Title: Optimal Transport Approach to Isoperimetric Inequality on Manifolds with Nonnegative Ricci Curvature
2. **The 39th Southeastern Analysis Meeting (SEAM 39)**, Clemson University, Mar 2023
   Title: An Optimal Transport Approach to Michael–Simon Inequalities
3. **The 40th South Eastern Analysis Meeting (SEAM 40)**, University of Florida, March 2024
   Title: Collapsing Ricci Limit Spaces with No Manifold Structure

Teaching

Teaching Assistant, Northwestern University

1.	Single-Variable Differential Calculus (2 sessions)	Fall 2021
2.	Multi-Variable Integral Calculus (2 sessions)	Winter 2022
3.	Single-Variable Calculus with Pre-Calculus	Fall 2022
4.	Elementary Differential Equations	Fall 2022
5.	Series and Multiple Integrals	Winter 2023
6.	MENU Linear Algebra/Multi-Variable Calculus	Winter 2023
7.	Foundations of Higher Math	Spring 2023
8.	MENU Linear Algebra/Multi-Variable Calculus	Spring 2023
9.	Linear Algebra	Fall 2023
10.	Analysis (Graduate Course)	Fall 2023

11. Single-Variable Integral Calculus (2 sessions) Winter 2024
12. Multi-Variable Integral Calculus Spring 2024
13. Series and Multiple Integrals Spring 2024

Last updated: October 10, 2024