

ANH TRAN

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EDUCATION

Rice University, Houston, TX	2021
B.S. in Mathematics	
University of Illinois at Chicago, Chicago, IL	2022 - 2026
University of Chicago, Chicago, IL	2026 - (expected) 2027
Ph.D. in Mathematics	

RESEARCH INTERESTS

Algebraic geometry, hodge theory, non-abelian hodge theory, twistor/hodge modules, deformation theory.

PAPERS

On the nilpotent residue non-abelian Hodge correspondence for higher-dimensional quasiprojective varieties, submitted, 2026, <https://arxiv.org/abs/2601.15553>.

The nonabelian Hodge correspondence for extensions on quasiprojective curves, in preparation.

ORGANIZATIONAL EXPERIENCE

Organizer, Baily-Borel-Satake and toroidal compactifications reading group	Spring 2026
Organizer, Kobayashi-Hitchin correspondence reading group	Spring 2025
Organizer, Moduli of K_3 surfaces reading group	Fall 2024
Co-organizer, Graduate Algebraic Geometry seminar	2024-2025
Co-organizer, Graduate Number Theory seminar	Spring 2024

HONORS, AWARDS

2018 Hubert E. Bray Prize, given annually to the most outstanding mathematics major.

GRADUATE SEMINAR TALKS

Graduate AG Seminar. Moduli of K_3 surfaces – General curve of genus 6 – Decompositions in derived categories – Generic Torelli theorem – Formal GAGA – Connectedness of Brill-Noether loci – Du Bois singularities – Stability of isomonodromic deformations – Fourier transform on elliptic curve.

Graduate NT Seminar. Root systems of algebraic groups – Jacobian varieties.

Hodge Theory Seminar. Mumford-Tate group – Deligne's finiteness theorem – Structure of period map – Limit Mixed Hodge Structure – Kummer surfaces – Basics of D-modules – Intersection cohomology – Hodge modules over a curve – PEL and Hodge type Shimura varieties – Hodge-generic compact subvarieties of A_g – Intro to p -curvature conjecture.

CONFERENCES, WORKSHOPS

Moduli of Varieties – SLMath Summer School	July 2026
Research seminar – Special Year at Institute for Advanced Study	November 2025
Summer Research Institute in Algebraic Geometry – Colorado State University	July 2025
Hodge theory and o-minimality – CIRM, Luminy	January 2024
Unlikely Intersection – Arizona Winter School	March 2023

TEACHING EXPERIENCE

University of Illinois Chicago

- TA for MATH 125 Elementary Linear Algebra Spring 2025, Fall 2025, Spring 2026
Fall 2025 - Summer 2024
- TA for MATH 210 Multivariable Calculus Fall 2024

Rice University

- TA for MATH 354 Honors Linear Algebra, 356 Group Theory, 376 Algebraic Geometry, STAT 312 Statistics and COMP 382 Algorithms.

MENTORSHIP

University of Illinois Chicago

- Directed Reading Program Spring 2026
Guided Ted Nguyen through Kirillov's notes on Lie groups and algebras.