

YUNHAI XIANG

EDUCATION

Western University

2025 — Now

Ph.D. in Mathematics (in progress)

Advisor: Chris Hall

Specialization: Number Theory and Arithmetic Geometry

Western University

2024

M.Sc. in Mathematics

Advisor: Chris Hall

University of Waterloo

2018 — 2023

B.Math. in Pure Mathematics, Honors, with Distinction

SKILLS

Languages Mandarin (Native), English (Fluent), French (Beginner)

Programming Python, C++, Lean

Softwares LaTeX, SageMath, Git, Cinema 4D

AWARDS

Mathematics Undergraduate Research Award

2022

- Highly competitive undergrad research award of value \$10000 at University of Waterloo. Worked on research project in summer related to Weyl groups, supervised by Prof. Matthew Satriano.

CONFERENCES, SEMINARS, AND TALKS

Conferences Talks

- Rigid Analytic Geometry*, Summer 2024, Ontario Graduate Mathematics Conference, UWaterloo
- Schubert Calculus and Cohomology of Grassmannians*, Summer 2022, Canadian Undergraduate Mathematics Conference, Université Laval

Conference Attendance

- Coming soon.

Seminar Talks

- Weyl Group and Root Datum*, Summer 2025, Algebraic Groups Seminar, UWO
- Hecke Operators*, Summer 2025, Algebraic Groups Seminar, UWO
- Parabolic and Borel Subgroups*, Summer 2025, Algebraic Groups Seminar, UWO
- Lie Algebras of Algebraic Groups*, Summer 2025, Algebraic Groups Seminar, UWO
- Non-Archimedean Fields*, Summer 2024, Rigid Analytic Geometry Seminar, UWO
- Admissible Topology*, Summer 2024, Rigid Analytic Geometry Seminar, UWO
- Cones and Affine Toric Varieties*, Summer 2024, Toric Varieties Learning Seminar, UWO
- Galois Cohomology*, Winter 2024, Graduate Student Seminar, UWO
- Derived Categories*, Fall 2022, Algebraic Geometry Working Seminar, UWaterloo

Mathematical Outreach Talks

- *Surreal Numbers and the Game of Go*, Summer 2025, Western Summer Math Camp
- *Mathematical Magic Tricks: Gilbreath's Principle*, Summer 2024, Western Summer Math Camp
- *Why is There no Quintic Formula*, Summer 2024, Western Summer Math Camp

Seminar Organization

- Algebraic Geometry Student Seminar, Fall 2024, co-organized with Alex Zwart
- Toric Varieties Learning Seminar, Summer 2024, co-organized with Nicolas Rieke

TEACHING & MENTORING

Course Instructorship

- Coming soon.

Teaching Assistantship

- MATH 3150, Elementary Number Theory I, Fall 2024
- MATH 2155, Mathematical Structures, Fall 2025
- CALCULUS 1501, Calculus II for Mathematical and Physical Sciences, Winter 2025
- MATH 1229, Methods of Matrix Algebra, Summer 2024, Summer 2025
- MATH 1228, Methods of Finite Mathematics, Summer 2024, Summer 2025
- CALCULUS 1000, Calculus 1, Winter 2024, Summer 2024, Winter 2025, Fall 2025

Directed Reading Program Mentorship

- Coming soon.