

YUNHAI XIANG

PERSONAL DETAILS

Name	Yunhai Xiang (in Chinese: 项云海, pronounced “yee-o-en-hi si-ang”)
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EDUCATION

Western University <i>Ph.D.</i> in Mathematics (in progress) Advisor: Chris Hall Specialization: Number Theory and Arithmetic Geometry	2025 — <i>Now</i>
Western University <i>M.Sc.</i> in Mathematics Advisor: Chris Hall	2024
University of Waterloo <i>B.Math.</i> in Pure Mathematics, Honors, with Distinction	2018 — 2023

SKILLS

Languages	Mandarin (Native), English (Fluent), French (Beginner)
Programming	Python, C++, Lean
Softwares	LaTeX, SageMath, Git, Cinema 4D
Hobbies	Magic Tricks

AWARDS

Mathematics Undergraduate Research Award	2022
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- 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

Conferences Attendance & Talks

Academic conferences attended and research talks given on them

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

Seminar Talks

Research or expository talks given on seminars

- *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

Seminar Organization

Research or learning seminars organized or co-organized

- Algebraic Geometry Student Seminar, Winter 2026, co-organized with Alex Zwart
- 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

Proctored and graded exams, graded homeworks, and taught tutorial sessions

- 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, Winter 2026
- 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, Winter 2026

Mathematical Outreach Lectures

Gave expository lectures to high school students on advanced mathematical topics

- *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

Directed Reading Program Mentorship

Mentored undergraduate students on reading or research projects, culminating in a presentation

- Coming soon.