

Curriculum Vitae

General Information

Name: Xinyu Zhou

Citizenship: China

Languages: English (fluent), Mandarin (native), German (working proficiency), French (working proficiency)

Affiliation: Boston University

E-Mail: xyz6@bu.edu

Research Interests

I am broadly interested in algebraic geometry and number theory. More specifically, I am currently interested in the geometry of Shimura varieties and their local analogues including the moduli spaces of p-adic shtukas. More recently, I focus on the applications of p-adic geometry to p-adic representation theories, which include representations arising from cohomologies of local Shimura varieties and Fargues-Scholze's geometrization of the local Langlands correspondence.

Education

Sep 2023 - Now **PhD in Mathematics**, Boston University

Sep 2018 – May 2023 **Master of Arts in Mathematics**, Boston University

Sep 2018 – May 2021 **Bachelor of Arts**, *magna cum laude with honors*, New York University

Major: Honors Mathematics

Minor: Linguistics

Phi Beta Kappa

Teaching Experience

Teaching Fellow, Boston University	Sep 2024 - Dec 2024
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Course: MA 225 Multivariable Calculus

Teaching Fellow, Boston University	Jan 2024 - May 2024
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Course: MA 412 Complex Variables

Teaching Fellow, Boston University	Sep 2023 - Dec 2023
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Course: MA 124 Calculus II

Teaching Assistant, Boston University	Sep 2022 - Dec 2022
Course: MA 225 Multivariate Calculus	
Teaching Assistant, Boston University	Feb 2022 - May 2022
Course: EK 103 Computational Linear Algebra	
Teaching Assistant, Boston University	Sep 2021 - Dec 2021
Course: MA 411 Advanced Calculus	
Math Peer Tutor, New York University	July 2019 - Aug 2019
Tutored students on all basic math courses: Calculus I to III, Linear Algebra, Theory of Probability, and Discrete Math	

Seminars Organized/Co-organized

Boston University Number Theory Expository Seminar (BUNTES), organizer	Fall 2024
Topic: Automorphic Representations	
STAGE Seminar, MIT, Co-organizer	Fall 2024
STAGE Seminar, MIT, Co-organizer	Spring 2022
STAGE Seminar, MIT, Co-organizer	Fall 2022
Hodge Theory Learning Seminar, Boston University, Organizer	Fall 2022

Selected Talks

Boston University Number Theory Expository Seminar (BUNTES)	Fall 2024
Talk given: Automorphic forms	
Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT	Fall 2024
Talk given: Multivalued functions, and abstract derivations and connections	
Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT	Fall 2022
Topic of the seminar: Cohomological obstructions to rational points	
Talk given: The étale-Brauer obstruction and insufficiency of the obstructions	
Boston University Number Theory Expository Seminar (BUNTES), Boston University	Fall 2022
Topic of the seminar: Intersection Theory	
Talks given: (1) Higher Chern classes and Segre classes	

(2) Grothendieck–Riemann–Roch theorem

Hodge Theory Learning Seminar, Boston University
Fall 2022

Topic of the seminar: Hodge Theory on Complex Manifolds

Talks given: Introduction to Hodge theory

Seminar on Topics in Arithmetic, Geometry, Etc. (STAGE), MIT

Spring 2022

Topic of the seminar: Uniform Mordell

Talk given: Intersection theory and height inequality 2

Boston University Number Theory Expository Seminar (BUNTES), Boston University

Spring 2022

Topic of the seminar: Class Field Theory

Talks given: (1) Norm index in local class field theory

(2) Introduction to geometric class field theory

Student Geometry Seminar, Boston University

Spring 2022

Topic of the seminar: Stacks and Moduli of Curves

Talks given: (1) Characterization of Deligne-Mumford stacks

(2) Irreducibility of moduli of stable curves

MA 841 Greatest hits in arithmetic geometry¹, Boston University

Fall 2021

Topic of the course: Various important results in arithmetic geometry

Talk given: Deligne's Weil I (Exposition on the latter half of the paper)

Student Arithmetic Geometry Reading Seminar, University of Minnesota (Online)

Fall 2020

Topic: p-adic Geometry (adic spaces, perfectoid spaces, shtukas)

Talk given: Complements on adic spaces

Conferences attended

Chromatic homotopy theory and p-adic geometry, American Institute of Mathematics, Pasadena, California
Dec 2024

Arizona Winter School 2023: Unlikely Intersections

Mar 2023

¹ This was a seminar-style course focusing on several influential results in arithmetic geometry.

Arizona Winter School 2023: Unlikely Intersections	Mar 2023
PCMI 2022 Graduate Summer School, Park City Mathematics Institute (IAS)	Jul - Aug 2022
Arizona Winter School 2022: Automorphic Forms Beyond GL ₂ , University of Arizona	Mar 2022
Arizona Winter School 2020: Nonabelian Chabauty, University of Arizona	Mar 2020