

CURRICULUM VITAE  
YOUSHENG SHI

Last Update: March 30, 2025  
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## Research Interests

Number theory, arithmetic algebraic geometry, and automorphic forms.

## Education

Fudan University, Shanghai, China	B.S. Mathematics	June 2011
University of California, Irvine	M.S. Mathematics	January 2013
University of Maryland, College Park	Ph.D. Mathematics	July 2019

Ph.D. Advisor: John Millson. Co-advised by Michael Rapoport.

## Employment

August 2019–August 2020, August 2021–May 2023	Van Vleck Visiting Assistant Professor
University of Wisconsin, Madison	
July 2023–Now	(tenure-tracked) Researcher
Zhejiang University	

## Publications

1. *Theta series and generalized special cycles on Hermitian locally symmetric spaces*, *Mathematische Annalen*, 386(3-4), 1463–1553.  
<https://link.springer.com/article/10.1007/s00208-022-02428-2>.
2. *Special cycles on the basic locus of unitary Shimura varieties at ramified primes*, *Algebra & Number Theory*, 17(10), 1681–1741.  
<https://msp.org/ant/2023/17-10/p01.xhtml>.
3. *Special cycles on unitary Shimura curves at ramified primes*, *Manuscripta Mathematica*, 172(1-2), 221–290.  
<https://link.springer.com/article/10.1007/s00229-022-01412-z>.
4. *The Kudla-Rapoport conjecture at a ramified prime for  $U(1,1)$*  (with Qiao He and Tonghai Yang), *Transactions of the American Mathematical Society*, 376, 2257–2291.  
<https://www.ams.org/journals/tran/2023-376-04/S0002-9947-2023-08845-6/>.
5. *Kudla program for unitary Shimura varieties* (with Qiao He and Tonghai Yang), *Scientia Sinica Mathematica*, 2021(10), 1595–1626.  
DOI: 10.1360/SSM-2021-0002, 1595–1626.
6. *A genus 2 arithmetic Siegel-Weil formula on  $X_0(N)$*  (with Siddarth Sankaran and Tonghai Yang), *Transactions of the American Mathematical Society*, 376(06), 3995–4041.  
<https://www.ams.org/journals/tran/2023-376-06/S0002-9947-2023-08843-2/home.html>.

7. *Kudla-Rapoport Conjecture for Kramer models* (with Qiao He and Tonghai Yang), *Compositio Mathematica*, 159(8), 1673-1740.  
<https://www.cambridge.org/core/journals/compositio-mathematica/article/kudlarapoport-conjecture-for-kramer-models/B06DD5B0481E2E6181A651E04BF91400>
8. *A proof of the Kudla-Rapoport conjecture for Kramer models* (with Qiao He, Chao Li and Tonghai Yang), *Inventiones Mathematicae*, 234(2), 721-817.  
<https://link.springer.com/article/10.1007/s00222-023-01209-1>.

## Preprint

1. *Pullback of arithmetic theta series and its modularity for unitary Shimura curves* (with Qiao He and Tonghai Yang), submitted. <https://arxiv.org/abs/2403.04566>.
2. *Regular models of ramified unitary Shimura varieties at maximal parahoric level* (with Qiao He and Yu Luo), arxiv preprint. <https://arxiv.org/abs/2410.04500>.
3. *The basic locus of ramified unitary Rapoport-Zink space at maximal vertex level* (with Qiao He and Yu Luo), arxiv preprint. <https://arxiv.org/abs/2502.06218>.

## Papers in preparation

1. *Cycles with local coefficients for unitary groups and vector-valued Siegel modular forms* (with Jens Funke and John Millson).

## Awards and Honors

1. People's fellowship, Fudan University, 2008-2011.
2. Mark E Lachtman Graduate Fellowship, University of Maryland, 2018-2019.

## Invited talks

1. Central Sectional Meeting of AMS, Madison (Sep 15, 2019).
2. Number Theory Seminar, University of Wisconsin, Madison (Oct 17. 2019).
3. Number Theory Seminar, University of Wisconsin, Madison (Sep 24. 2020).
4. Number Theory Seminar, Morningside Center of Mathematics, Chinese Academy of Sciences (Oct 22 2020).
5. Jinling Conference on Number Theory and Arithmetic Geometry, Nanking 2021 (Feb 22-26, 2021)
6. Number Theory Seminar, Peking University (May 27, 2021)
7. Conference on Theta Series: Representation Theory, Geometry and Arithmetic on the occasion of Stephen Kudla's 70th birthday, online, hosted by Fields Institute (July 5-9, 2021)

8. Number Theory Seminar, Morningside Center of Mathematics, Chinese Academy of Sciences (July 22 2021).
9. Algebra and Number Theory Seminar, University of Arizona (Oct 26, 2021)
10. Number Theory Seminar, YMSC, Tsinghua University (Nov 3, 2021)
11. A series of lectures on Kudla-Rapoport conjectures, Hua Luogeng Mathematics Forum, Chinese Academy of Science (July 15, August 9, and 11, 2022)
12. Special Session “Modular Forms, Hypergeometric Functions, Character Sums and Galois Representations”, AMS Joint Mathematics Meeting 2023, Boston.
13. Special Session “Automorphic Forms and Special Cycles”, AMS Joint Mathematics Meeting 2023, Boston.
14. Hong Kong University Number Theory Day, June 2023, Hong Kong.
15. Workshop on BSD conjecture and Special value of  $L$ -functions, July 2023, Tianyuan Mathematics Research Center, Yunnan.
16. Number Theory conference on occasion of Tonghai Yang’s 60 birthday at Shandong University, Nov 2023, Jinan.
17. Special Session “Theta correspondence”, AMS Joint Mathematics Meeting 2024, San Francisco.
18. Math Colloquium of Pohang University of Science of Technology, March 2024, Pohang, South Korea.
19. Annual Meeting of Chinese Mathematical Society 2024, Algebra and Number Theory Section, October 2024, Jiaxing China.
20. Zhongguancun Number Theory Seminar, Nov 2024, Beijing, China.

### **Teaching at University of Wisconsin, Madison**

1. Teaching Assistant or Grader, 2013-2019.
2. Abstract Algebra, Fall 2019.
3. Elementary Matrix and Linear Algebra, Spring 2020, Spring 2023.
4. Differential Equations and Linear Algebra, Fall 2021.
5. Modern Algebra II, Spring 2022.
6. Elementary Number Theory, Spring 2022, Spring 2023.
7. Algebraic Number Theory, Fall 2022.

## Teaching at Zhejiang University

1. Elementary Number Theory, Spring-Summer 2024.
2. Abstract Algebra I, Fall-Winter 2024.

## Other conferences attended

1. Jinling Conference on Number Theory and Arithmetic Geometry, Nanking 2021 (April 2024).
2. Conference on Arithmetic Algebraic Geometry on the occasion of Michael Rapoport's 75th birthday, University of Münster (October 2-6, 2023).
3. Conference on Theta Series: Representation Theory, Geometry and Arithmetic on the occasion of Stephen Kudla's 70th birthday, online, hosted by Fields Institute (July 5-9, 2021)
4. The Eighth Conference on Number Theory of China, Jintan (June 25-30, 2021)
5. AIM workshop on Arithmetic intersection theory on Shimura varieties, online (Jan 4-8, 2021).
6. Central Sectional Meeting of AMS, Madison (Sep 14-15, 2019).
7. AMS Joint Mathematics Meeting, Baltimore (Jan 16-19, 2019).
8. AMS Joint Mathematics Meeting, San Diego (Jan 10-13, 2018).
9. Shimura varieties and hyperbolicity of moduli spaces, UQAM, Montreal (May 28 - June 1, 2018).
10. Conference on Arithmetic Algebraic Geometry on the occasion of Michael Rapoport's 70th birthday, University of Bonn (October 1-5, 2018).

## Academic Services

1. Organizer of the Student Geometry seminar, University of Maryland (2016).
2. Co-organizer of the Student Algebraic Geometry seminar, University of Maryland (2018).
3. Co-organizer of the Number Theory Seminar, University of Wisconsin, Madison (2020-2021).
4. Reviewer for *Compositio Mathematica*, *Mathematische Annalen*, *IMRN*.
5. Instructor for the REU program at the Summer School of Algebra and Number Theory organized by the Chinese Academy of Science and Peking University, Peking University (2024).