

## EDUCATION

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**Max Planck Institute for Mathematics, Bonn**

Jan 2022–present

Doctoral student, supervised by Don Zagier

**St John's College, University of Oxford, Oxford**

Oct 2017–Jun 2021

Master of Mathematics in Mathematics

## PUBLICATIONS AND PREPRINTS

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- [1] Pengcheng Zhang. *On converse theorems for Hilbert modular forms assuming unramified twists.* to appear in the Quarterly Journal of Mathematics.
- [2] Pengcheng Zhang. *The 2-complexity of even positive integers.* Integers, 24:Paper No. A109, 11, 2024.
- [3] Benjamin Bedert, George Cooper, Thomas Oliver, and Pengcheng Zhang. *Twisting moduli for  $\mathrm{GL}(2)$ .* J. Number Theory, 217:142–162, 2020.
- [4] Pengcheng Zhang. *Elliptic curves and Fourier coefficients of meromorphic modular forms.* preprint on arXiv.
- [5] Pengcheng Zhang. *The complexity of Ford domains of  $\Gamma_0(N)$ .* preprint on arXiv.
- [6] Tian Wang and Pengcheng Zhang. *Ordinary primes for  $\mathrm{GL}_2$ -type abelian varieties and weight 2 modular forms.* preprint on arXiv.

## RESEARCH VISIT

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- Leiden University, Leiden, hosted by Jan Vonk 28–31 Oct, 2025
- University of Luxembourg, Esch-sur-Alzette, hosted by Michael Daas 14–17 Oct, 2025
- Louisiana State University, Baton Rouge, hosted by Ling Long 29 Mar–4 Apr, 2025
- The Abdus Salam International Centre for Theoretical Physics, Trieste, hosted by Vasily Golyshev and Don Zagier 30 Jun–8 Jul, 2024
- The University of Hong Kong, Hong Kong, hosted by Ben Kane 19–23 Feb, 2024
- SUSTech International Center for Mathematics, Shenzhen, hosted by Don Zagier 22 Nov–17 Dec, 2021

## TALKS IN RESEARCH SEMINARS/CONFERENCES

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- *Meromorphic modular forms and symmetric powers of elliptic curves* in Number Theory Seminar at University of Luxembourg, Esch-sur-Alzette 14 Oct, 2025
- *Elliptic curves and meromorphic modular forms* in International Workshop on Automorphic Forms at SwissMAP Research Station, Les Diablerets 4 Sep, 2025
- *Coefficients of modular forms modulo (powers of) primes* in Participative Learning Seminar on Any Number Theory (PLeASANT) at Max Planck Institute for Mathematics, Bonn 26 May, 2025
- *Elliptic curves and coefficients of meromorphic modular forms* in Oberseminar Zahlentheorie at University of Cologne, Cologne 14 Apr, 2025
- *Ordinary primes of weight 2 modular forms* in the South Regional Number Theory Conference 2025 at Louisiana State University, Baton Rouge 29 Mar, 2025

- *Elliptic curves and coefficients of meromorphic modular forms* in Oberseminar Anlytic Number Theory and Automorphic Forms at University of Bonn, Bonn 21 Nov, 2024
- *Converse theorems for Hilbert modular forms* in the 36th Automorphic Forms Workshop at Oklahoma State University, Stillwater 23 May, 2024
- *A converse theorem for Hilbert modular forms* in Oberseminar Anlytic Number Theory and Automorphic Forms at University of Bonn, Bonn 9 Nov, 2023
- *Converse theorems for automorphic forms* in St John's College Mathematics Seminar (with Benjamin Bedert) at St John's College, University of Oxford, Oxford 5 Mar, 2020

## TALKS IN LEARNING SEMINARS/STUDY GROUPS

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- *Hecke operators on  $p$ -adic modular forms* in the IMPRS Seminar on modular forms at Max Planck Institute for Mathematics, Bonn 19 Nov, 2024
- *Orthogonal groups and their symmetric spaces* in the Study Group on Rigid Meromorphic Cocycles for Orthogonal Groups at Max Planck Institute for Mathematics, Bonn 24 Oct, 2024
- Several talks in Exponential Sum Learning Seminar at Max Planck Institute for Mathematics, Bonn 17 Nov, 15 Dec, 2023, and 12 Jan, 2024
- *$L$ -functions and/in Selberg Class* in the IMPRS Seminar on  $L$ -functions at Max Planck Institute for Mathematics, Bonn 24 Jan, 2023

## CONFERENCES, WORKSHOPS, RESEARCH SCHOOLS ATTENDED

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- International Workshop on Automorphic Forms at SwissMAP Research Station, Les Diablerets 31 Aug–5 Sep, 2025
- Conference on Progress and Emergent Theories in Zeta and  $L$ -Functions at Max Planck Institute for Mathematics, Bonn 21–25 Jul, 2025
- 33èmes Journées Arithmétiques at University of Luxembourg, Esch-sur-Alzette 30 Jun–4 Jul, 2025
- Asymptotic Counting and  $L$ -Functions at Max Planck Institute for Mathematics, Bonn 5–9 May, 2025
- Southern Regional Number Theory Conference 2025 at Louisiana State University, Baton Rouge 29–30 Mar, 2025
- The Legacy of John Tate, and Beyond at Harvard University, Cambridge 17–21 Mar, 2025
- Arithmetic Geometry in Shenzhen at Southern University of Science and Technology, Shenzhen 16–20 Dec, 2024
- New Advances in the Langlands Program: Geometry and Arithmetic at University of Oxford, Oxford 30 Sep–4 Oct, 2024
- School on Hodge Theory and Shimura Varieties at University of Duisburg-Essen, Essen 23–27 Sep, 2024
- Conference on Arithmetic Geometry at Max Planck Institute for Mathematics, Bonn 22–26 Jul, 2024
- Modular Forms,  $L$ -functions, and Eigenvarieties at École Normale Supérieure, Paris 18–21 Jun, 2024
- The 36th Automorphic Forms Workshop at Oklahoma State University, Stillwater 20–24 May, 2024
- Shanks Conferences on  $L$ -functions and Automorphic Forms at Vanderbilt University, Nashville 13–16 May, 2024
- Periods in Physics, Number Theory and Algebraic Geometry at Hausdorff Research Institute for Mathematics, Bonn 22–26 Apr, 2024
- International Conference on Modular Forms and  $q$ -Series at University of Cologne, Cologne 11–15 Mar, 2024
- Modular Curves and their Arithmetic at University of Warwick, Coventry 6–8 Dec, 2023
- MM(P): Mahler Measures of Polynomials at Radboud University, Nijmegen 24–27 Oct, 2023
- Modular Forms and Arithmetic Geometry at TU Darmstadt, Darmstadt 18–22 Sep, 2023
- Young Number Theorists in Bonn at Max Planck Institute for Mathematics, Bonn 11–15 Sep, 2023
- Arithmetic of automorphic forms at Laboratoire de Mathématiques d'Orsay, Orsay 4–8 Sep, 2023

- **Early Number Theory Researchers Workshop 2023** at University of Bielefeld, Bielefeld 23–25 Aug, 2023
- **Summer School on the Arithmetic of the Langlands Program** at University of Bonn, Bonn 8–12 May, 2023
- **Arithmetic Statistics, Automorphic Forms, and Ergodic Methods** at Max Planck Institute for Mathematics, Bonn 24–28 Apr, 2023
- **Special values of  $L$ -functions** at Paderborn University, Paderborn 13–17 Mar, 2023
- **Conference on Motives and Automorphic Forms** at Max Planck Institute for Mathematics, Bonn 6–10 Mar, 2023
- **Number theory meets  $p$ -adic representations** at University of Münster, Münster 13–17 Feb, 2023
- **Luxembourg Number Theory Day 2022** at University of Luxembourg, Esch-sur-Alzette 16 Dec, 2022
- **Early Number Theory Researchers Workshop 2022** at TU Darmstadt, Darmstadt 26–28 Oct, 2022

## OTHER EXPERIENCES

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- Referee for Results in Mathematics and Proceedings of the American Mathematical Society 2025
- Senior Counselor at Ross Mathematics Program (Ross/Asia) in Huangshan 9 Jul–10 Aug, 2018
- Junior Counselor at Ross Mathematics Program (Ross/Asia) in Huangshan 10 Jul–11 Aug, 2017

## LANGUAGES

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Chinese, English