

# Shenxing Zhang

B1810 Jade Science and Education Building, 485 Danxia Road, Hefei Anhui PRC  
Hefei University of Technology

✉ [zhangshenxing@hfut.edu.cn](mailto:zhangshenxing@hfut.edu.cn) • 🌐 <https://zhangshenxing.github.io/>

## Education

---

- ▶ **Ph.D. Mathematics**, *Nov. 2015*  
School of Mathematical Sciences, University of Science and Technology of China  
*Advisor: Yi Ouyang*
- ▶ **B.A. Mathematics**, *Jun. 2010*  
School of the Gifted Young, University of Science and Technology of China  
*Advisor: Yi Ouyang*
- ▶ **Visiting Student**, *May 2015 – Jun. 2015*  
Department of Mathematics, University of California, Berkeley, USA  
*Advisor: Xinyi Yuan*

## Academic Appointment

---

- ▶ **Research Associate Professor**, *Dec. 2021 – Present*  
School of Mathematics, Hefei University of Technology
- ▶ **Postdoctoral Fellow**, *Apr. 2018 – Nov. 2021*  
School of Mathematical Sciences, University of Science and Technology of China  
*Mentor: Yi Ouyang*
- ▶ **Postdoctoral Fellow**, *Mar. 2016 – Feb. 2018*  
Academy of Mathematics and Systems Science, Chinese Academy of Sciences  
*Mentor: Ye Tian*

## Publications and Preprints

---

### Publications

---

- ◇ **S. Zhang**. The generating fields of twisted Kloosterman sums. *Int. J. Number Theory*, (2025), to appear.
- ◇ **S. Zhang**. On the linearity of the periods of subtraction games. *Theor. Comput. Sci.*, 985 (2024).
- ◇ **S. Zhang**. On a comparison of Cassels pairings of different elliptic curves. *Acta Arith.* 211 (2023), no. 1, 1–23.

- ◇ **S. Zhang.** On the Newton polygons of twisted  $L$ -functions of binomials. *Finite Fields Appl.* 80 (2022), Paper No. 102026, 20 pp.
- ◇ J. Li, **S. Zhang.** The 3-class groups of  $\mathbb{Q}(\sqrt[3]{p})$  and its normal closure. *Math. Z.* 300 (2022), no. 1, 209–215.
- ◇ J. Li, Y. Ouyang, Y. Xu, **S. Zhang.**  $\ell$ -Class groups of fields in Kummer towers. *Publ. Mat.* 66(2022), no. 1, 235–267.
- ◇ **S. Zhang.** The generating fields of two twisted Kloosterman sums. *J. Univ. Sci. Technol. China* 51 (2021), no. 12, 879–888.
- ◇ Y. Ouyang, **S. Zhang.** Birch’s lemma over global function fields. *Proc. Amer. Math. Soc.* 145 (2017), no. 2, 577–584.
- ◇ Y. Ouyang, **S. Zhang.** Newton polygons of  $L$ -functions of polynomials  $x^d + ax^{d-1}$  with  $p \equiv -1 \pmod d$ . *Finite Fields Appl.* 37 (2016), 285–294.
- ◇ Y. Ouyang, **S. Zhang.** On second 2-descent and non-congruent numbers. *Acta Arith.* 170 (2015), no. 4, 343–360.
- ◇ Y. Ouyang, **S. Zhang.** On non-congruent numbers with 1 modulo 4 prime factors. *Sci. China Math.* 57 (2014), no. 3, 649–658.

## Preprints

---

- ◇ **S. Zhang.** On the Diophantine equation  $my^2 = x^3 - k^3$ . (2025), submitted.
- ◇ Z. Wang, **S. Zhang.** On the quadratic twist of elliptic curves with full 2-torsion. (2022), submitted.
- ◇ **S. Zhang.** The virtual period of the degree sequences of the exponential sums. *Arxiv:* 2010.08342, preprint.

## Grants & Awards

---

### Grants

---

- ◇ 173 Program, Co-PI
- ◇ Fundamental Research Funds for the Central Universities (JZ2023HG TB0217)
- ◇ NSFC (12001510)
- ◇ China Postdoctoral Science Foundation (2017M611027)
- ◇ Fundamental Research Funds for the Central Universities (WK0010000061), Co-PI
- ◇ NSFC (12271335, 11601255, 11571328, 11201445, 11171317), Co-PI

### Awards

---

- ◇ Young Teachers Teaching Basic Skills Competition in HFUT, 2nd Prize, 2023.
- ◇ National Scholarship for Graduate Students, 2013
- ◇ National Scholarship for Undergraduate Students, 2009
- ◇ Anhui Excellent Young Student, 2006

## Teaching Experience

---

### Teaching

---

- ▶ Hefei University of Technology
  - 1400261B Complex Function and Integral Transformation, *Fall 2022-2024*
  - 1400071B Linear Algebra, *Fall 2024*
  - 034Y01 Mathematics (II), *Spring 2022-2023*
- ▶ University of Science and Technology of China
  - 001548 Complex Variables B, *Fall 2020*
  - MA05109 Algebraic Number Theory, *Spring 2020*

### Teaching Assistant

---

- ▶ Tsinghua University
  - The Yau Tsinghua Mathcamp, Linear Algebra, *Summer 2021-2023*
- ▶ Hefei University of Technology
  - Probability and Statistics, *Fall 2021*
- ▶ University of Chinese Academy of Sciences
  - Summer School on Algebra and Number Theory, *Summer 2019*
  - Basic Number Theory, *Fall 2016*
- ▶ University of Science and Technology of China
  - 001356 Basic Algebra, *Fall 2014*
  - 001704 Abstract Algebra (Honor), *Spring 2013*
  - 001356 Basic Algebra, *Fall 2012*
  - 001010 Abstract Algebra, *Fall 2011*
  - 001012 Complex Variables, *Spring 2011*

### Publications on Teaching

---

- ◇ Z. Yuan, **S. Zhang**. Research on Laurent series of complex functions in different annulus (in Chinese). *Journal of Nanyang Normal University*, 2024, 23(3): 38–41.
- ◇ Y. Ouyang, **S. Zhang**. Theoretic application of elementary transformations in linear algebra teaching (in Chinese). *College Mathematics*, 2023, 39(5): 68–75.

### Advisers

---

- Bachelor's Thesis
  - X. Qiu, Research on the isogenies of elliptic curves and its applications on cryptography, 2024
  - X. Liu, The class groups of quadratic fields and their applications, 2022
- National Student Innovation and Entrepreneurship Training Program
  - S. Zhu, Y. Wang, Y. Deng, J. Yao, T. Luo, A contagion model of 2019-nCoV, 2022-2023

## Referee for Journals

---

- |   |  |
|---|--|
| ◇ <i>International Journal of Number theory</i> | ◇ <i>Pure and Applied Mathematics Quarterly</i>                      |
| ◇ <i>Algebra Colloquium</i>                     | ◇ <i>Bulletin of the Belgian Mathematical Society – Simon Stevin</i> |
| ◇ <i>The Ramanujan Journal</i>                  | ◇ <i>Scientia Sinica Mathematica (Chinese)</i>                       |
| ◇ <i>Finite Fields and Their Applications</i>   | ◇ <i>College Mathematics (Chinese)</i>                               |

## Research Interests

---

- |                    |                  |
|--------------------|------------------|
| ◇ Elliptic curves  | ◇ Class groups   |
| ◇ Exponential sums | ◇ Iwasawa theory |

*Last updated in March 29<sup>th</sup>, 2025*