

Zhiyuan Liu

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EDUCATION

Southern University of Science and Technology (SUSTech) Shenzhen, China
Bachelor of Science in Mathematics, Advisor: Prof. Ziqing Xiang *Fall 2023 – Present*

- **GPA:** 3.83 / 4.00 or 92.51/100 | **Rank:** 15/99
- **Core Coursework:**
 - *Pure Mathematics:* Abstract Algebra(H) (98), Topology (98), Probability Theory (98), Elementary Number Theory (100), Partial Differential Equations(H) (94).
 - *Applied Mathematics:* Computational Methods(H) (96).
 - *Graduate Course:* Topics in Algebra and Number Theory (97), Topics in Combinatorics (94), Differential Manifolds (94), Commutative Algebra (86).

KTH Royal Institute of Technology (KTH) Stockholm, Sweden
Exchange Program *Spring 2026*

- *Graduate Course:* Computational Methods for Stochastic Differential Equations and Machine Learning (P), Game Theory(A).

University of Chinese Academy of Sciences (UCAS) Beijing, China
Sino-French Summer School *Summer 2025*

- **Coursework:** Algebraic Topology (30/50) , Differential Geometry (50/50) , Probability Theory (42/50).

RESEARCH INTERESTS

Combinatorics, Graph Theory, Algebraic Combinatorics, Number Theory.

PUBLICATIONS / PREPRINTS

- **Counting Lattice Points in Minkowski Sums of Cross Polytopes(Under Review)** 2026
Research Article, Joint with Ziyi Dai, Qilin Hou, Warut Thawinrak, Hongyu Wang, arxiv:2608.16037
- **Cirtoaje-Leng Inequality(Under Review)** 2025
Research Article, Joint with Chunji Wang, Yuchi Wu
- **Optimum Coefficients of Two Inequalities** 2023
Explosivity Article

RESEARCH & ACADEMIC PROJECTS

Incidence Geometry with Polarity and Tiled Surfaces *Summer 2026*
PACE 2026 Speaker, Advisor: Yuchong Zhang

Polynomial Methods and Incidence Theory *Spring 2025*
Seminar Speaker, Advisor: Prof. Ihringer Ferdinand

Special Solutions of 2 Inequalities from AMM and Discrete Analogue of One Type of Gronwall Inequality *Spring 2024*
Honors Class of SUSTech Workshop Speaker

TEACHING EXPERIENCE

- **Teaching Assistant, Linear Algebra, SUSTech** Fall 2025

HONORS & AWARDS

- **First Prize (Gold Medal)**, Chinese Mathematics Olympiad (CMO) 2022
- **Silver Prize (Silver Medal)**, Chinese Mathematics Olympiad (CMO) 2021
- **First Prize**, Chinese Mathematics Competitions for College Students(CMC) - Final Competition 2025
- **First Prize**, Chinese Mathematics Competitions for College Students(CMC) - Guangdong Province 2025,2024,2023
- **First-Class Scholarship**, SUSTech 2023
- **Outstanding Student**, SUSTech 2025,2024,2023

SKILLS & EXTRACURRICULAR ACTIVITIES

- **Programming & Tools:** Python, L^AT_EX, C++.
- **Languages:** Mandarin (Native), English (Proficient).
- **Problem Setter:** *New Star Mathematical Olympiad*, Designed original problems in elementary number theory.
- **Competition Assistant Coach:** Mathematics Competition for High School Students, The First High School of Changsha