# Kaiyang Xie

University of Science and Technology of China.
373 Huangshan Rd., Hefei, Anhui 230022, China

+86-18932748001
xingkongyang@mail.ustc.edu.cn
You can fine my CV here: CV

## Education

**University of Science and Technology of China.**, BS in School of the Gifted Young 09/2022 - 07/2026
Major: Pure Mathematics, GPA: 3.75/4.3, Rank: 42/181 (Mathematics Department); 22/76 (Pure Mathematics Direction)

**Courses:**

· Advanced Combinatorics 95/100

· Linear Algebra B1 97/100

· Linear Algebra B2 95/100

· Algebraic Structure 98/100

· Foundation of Algebra 98/100

## Experiences

**An $\epsilon$ Tester to Graph Isomorphism to Expanders** 09/2024 - Present

Undergraduate Researcher, **Supervisor:** Pan Peng

· This algorithm is to test isomorphism between expander graphs in **sublinear time** with **one-side-error**

· Researched and analyzed graph algorithms, testers, graph models, expander graph properties, color refinement, and W-L theoretical foundations.

· Applied k-WL color refinement to address expander graph isomorphism, aiming to simplify algorithms using random walks for sublinear time performance.

**Freshman Seminar — Risk Assessment Based on Cost Control** 12/2022 - 05/2023

Participant

· I read the literature on inventory management, convex optimization, statistics, and stochastic programming methods to guide the project methodology.

· We constructed a model to process inventory management and theoretically calculated some ideal data (e.g., random variables that obey a negative binomial distribution) to obtain the best expected profit. For some details, I list my codes in github: Codes.

· Developed C++ software using VScode to implement risk assessment models.

**Introduction to Algorithms** 09/2024 - 01/2025

**Supervisor:** Naijie Gu

· Developed and implemented C programs using Dev-C++ to reproduce and optimize textbook algorithm examples.

· Conducted experiments and utilized relevant tools to test algorithm performance and efficiency.

· For some details, I list my codes in github: Codes.

## Skills

**Programming:** C/C++, Python

**Knowledge:** · Some knowledge of Graph Theory and Spectual Graph Theory.
· Some knowledge of Combinatorics and Advanced Combinatorics
· Introduction to Algorithms, especially **sublinear algorithms**
**English:** TOEFL: 89

## Awards

· Outstanding Student Scholarship (3rd) ( 15% ) 2023
· Striving Award ( 5% ) 2023
· Outstanding Student Scholarship (3rd) ( 15% ) 2024

## Extracurricular

**Teaching Assistant in Course "Linear Algebra B1"** 09/2024 - Present
· Served as a Teaching Assistant by providing homework solutions, assisting students with queries, grading assignments, conducting recitations, and grading exams including quizzes, midterms, and finals.
· Utilized LaTeX to prepare session materials and recorded recitations videos.