Jinye He

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Education

University of Oxford **Oct. 2022 – Sept. 2023**

Master of Science in Mathematics and Foundation of Computer Science

University of Science and Technology of Science **Sept. 2018 – June 2022**

Bachelor of Science in Mathematics and Applied Mathematics

Relevant Coursework

- Algebraic number theory
- Analytical number theory
- Elliptic curves
- Modern algebra
- Cryptography
- Computer programming

Preprint

A non-uniform extension of Baranyai's Theorem Jinye He, Hao Huang and Jie Ma

Research Experience

An Extension Baranyai's Theorem **Mar. 2021–June 2022**

National University of Singapore & University of Science and Technology of Science *Prof. Hao Huang & Prof. Jie Ma*

- Baranyai's Theorem states that a complete k-uniform hypergraph K_n^k is 1-factorable if and only if $k \mid n$.
- Extended this theorem into non-uniform settings.
- Determined all n, k, such that the family $K_n^{\leq k}$ consisting of subsets of $[n]$ of size up to k is 1-factorable.

A survey of Kahn-Kalai Conjecture **May 2023 – Aug. 2023**

University of Oxford *Prof. Paul Balister*

- Park and Pham successfully proved the renowned Kahn-Kalai conjecture, offering an upper bound for thresholds.
- Offered many examples to solidify the conjecture.
- Gave various application of this result.

Research in Cryptography **Sept. 2023 – Present**

National University of Singapore *Prof. Jiaheng Zhang*

- Learned various Zero-Knowledge Proof protocols

Awards

ICCM (International Congress of Chinese Mathematicians) Creative Undergraduate Thesis Award

2022 Nanjing, China

Teaching Assistant

Linear Algebra B1 *Prof. Yihuang Shen* Spring 2021 USTC

Combinatorics *Prof. Jie Ma & Prof. Xiande Zhang* Autumn 2021 USTC

Other Skills

Programming: Python, C, R, MATLAB, Mathematics

Language: English, Chinese