

Xiang Li 李想

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RESEARCH INTERESTS

Algebraic number theory and arithmetic geometry, in particular nonabelian Chabauty methods: the Chabauty–Kim method over number fields, S -integral points on the thrice-punctured line $\mathbb{P}^1 \setminus \{0, 1, \infty\}$, Kim’s Conjecture over quadratic fields, and the S -Selmer section conjecture.

EDUCATION

PhD in Algebra and Number Theory

Sep 2023 – present

School of Mathematics (Hodge Institute), The University of Edinburgh

Supervisor: Professor Minhyong Kim

MASt in Mathematics (Part III)

Oct 2022 – Jun 2023

Department of Pure Mathematics and Mathematical Statistics, University of Cambridge

BSc (Hons) Mathematics, First Class Honours

Sep 2020 – Jul 2022

School of Mathematics, The University of Edinburgh

BSc in Mathematics

Sep 2018 – Jun 2020

School of Mathematics, South China University of Technology

PREPRINTS

Nonabelian Chabauty for the thrice-punctured line over cyclotomic fields, with Minhyong Kim and Martin Lüdtkke. [arXiv:2609.01128](https://arxiv.org/abs/2609.01128), September 2026.

Polylogarithmic Chabauty–Kim loci over number fields, with Martin Lüdtkke. [arXiv:2608.20615](https://arxiv.org/abs/2608.20615), August 2026.

AWARDS AND SCHOLARSHIPS

Carnegie PhD Scholarship, 2023 – 2027.

Napier Medal and Gangadhar Balwant Gadgil Prize for the best 4th year student, 2021/22.

Arthur Erdelyi Prize for distinguished performance in the Degree Examinations for year 3 Mathematics, 2020/21.

Dr Nigel Suess Prize for distinguished performance in ‘Introduction to Number Theory’, 2020/21.

College Vacation Scholarship, 2020/21.

National Scholarship (China), 2018/19.

TALKS

Nonabelian Chabauty methods over number fields. Glasgow Algebra and Number Theory Seminar, School of Mathematics and Statistics, University of Glasgow, UK. 14 October 2026.

Polylogarithmic Chabauty–Kim loci over number fields. Young Researchers in Algebraic Number Theory VIII, University of Bristol, UK. 3 September 2026.

Chabauty–Kim methods over number fields: $\mathbb{P}^1 \setminus \{0, 1, \infty\}$. Speed talk, ChaBONNty Conference, Max Planck Institute for Mathematics, Bonn, Germany. 2 July 2026.

S -integral points on the thrice-punctured line over cyclotomic fields. Young Researchers in Algebraic Number Theory VII, University of Nottingham, UK. 5 September 2025.

Rigid geometry and Coleman function. The GEARS seminar, University of Glasgow, UK. 7 February 2025.

Introduction to Chabauty–Kim methods on S -unit equations. Young Researchers in Algebraic Number Theory VI, University of Oxford, UK. 2 August 2024.

Tannakian category, unipotent completion, and de Rham fundamental group. Examples Showcase, GlaMS, ICMS, Edinburgh, UK. 1 December 2023.

Euler’s totient theorem and the prime number theorem (with Ella Yu). London Learning Lean seminar, Imperial College London and Zoom. 16 February 2023.

TEACHING

All tutoring at the School of Mathematics, The University of Edinburgh.

2026–27, Semester 1: Honours Differential Equations

2025–26, Semester 2: Fundamentals of Pure Mathematics

2025–26, Semester 1: Introduction to Mathematics at University

2024–25, Semester 2: Proofs and Problem Solving; Fundamentals of Pure Mathematics

2024–25, Semester 1: Introduction to Linear Algebra; Tutor at the MathsBase

2023–24, Semester 2: Calculus and its Applications; Algebraic Topology

CONFERENCES AND WORKSHOPS

Young Researchers in Algebraic Number Theory VIII, University of Bristol, UK. 2–4 September 2026.

ChaBONNty Conference, Max Planck Institute for Mathematics, Bonn, Germany. 29 June–3 July 2026.

Young Researchers in Algebraic Number Theory VII, University of Nottingham, UK. 3–5 September 2025.

Arithmetic, Geometry, Space and Time: a workshop on the occasion of Minhyong Kim’s 61st birthday, ICMS, Edinburgh, UK. 25–29 November 2024.

Young Researchers in Algebraic Number Theory VI, University of Oxford, UK. 31 July–2 August 2024.

The Mordell Conjecture 100 Years Later, MIT, Cambridge, MA, USA. 8–12 July 2024.

Gauge Fields in Arithmetic, Topology and Physics, ICMS, Edinburgh, UK. 15–19 April 2024.

Winter Workshop Chabauty–Kim 2024, Heidelberg University, Germany. 14–16 February 2024.

SOFTWARE

PolylogNF — Sage code accompanying the preprints *Polylogarithmic Chabauty–Kim loci over number fields* and *Nonabelian Chabauty for the thrice-punctured line over cyclotomic fields*.

prime-number-theorem — a formal proof of the prime number theorem in Lean, with Huajian Xin, Ella Yu and others.

Numerical Library of Mathematics Algorithm — a C++ library for numerical algorithms.