

30th Sept 2024
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RESEARCH INTERESTS

Algebraic geometry, non-archimedean geometry, mirror symmetry, logarithmic geometry, tropical geometry, enumerative geometry

EMPLOYMENT

- **William W. Elliott Assistant Research Professor, Duke University** Aug 2024 - Jul 2027
 - **Mentor::** Joe Rabinoff

EDUCATION

- **PhD, Imperial College London (LSGNT)** Oct 2019 - Aug 2024
 - **Project:** Non-Archimedean Periods
 - **Advisors::** Johannes Nicaise, Richard Thomas
 - **Mini projects:** The Cohomology and Integral Models of Kottwitz-Harris-Taylor Shimura Varieties, Non-Archimedean Mirror Symmetry for Abelian Varieties
- **MMath, University of Cambridge** 2018-2019
 - **Part III Essay:** Arithmetic Statistics of Elliptic Curves, supervised by Professor Thorne
- **BA in Mathematics, University of Cambridge** 2015-2018

WORK EXPERIENCE

- **Parliamentary Office for Science and Technology (POST) Fellow** May - Aug 2023
 - Worked with the House of Lords Digital and Communications Select Committee
 - Led the planning and scoping of the inquiry on Large Language Models (LLMs), including preparing multiple briefings and delivering a presentation to the committee on AI and LLMs
 - Supported briefing work in other areas of the committee's remit including BBC regulation and Digital Market competition

PREPRINTS

- Non-archimedean periods of log Calabi-Yau Surfaces, with Jonathan Lai (in preparation)
- Non-archimedean analytic fibrations and mirror symmetry (in preparation)
- Analytification of logarithmic schemes, with Robert Crumplin (in preparation)

AWARDS

- Turing Grant Global Fellows placement (£1600) Jan 2023
- Doris Chen Mobility Award (£1000) November 2022
- EPSRC Studentship for London School of Geometry and Number Theory 2019-2023

RESEARCH VISITS

- Institut des Hautes Études Scientifiques November 2023
- Technische Universität München, Oct - Dec 2022

TALKS

- Non-archimedean periods of log Calabi-Yau surfaces, Caltech April 2025
- Non-archimedean periods of log Calabi-Yau surfaces, University of Michigan, Ann Arbor March 2025
- Non-archimedean periods of log Calabi-Yau surfaces, Duke Nov 2024
- Non-archimedean periods of log Calabi-Yau surfaces, The University of Edinburgh April 2024
- Non-archimedean periods of log Calabi-Yau surfaces, King's College London Nov 2023
- Non-archimedean periods of log Calabi-Yau surfaces, Imperial College London Nov 2023
- Non-archimedean periods of log Calabi-Yau surfaces, Institut des Hautes Études Scientifiques Nov 2023
- Large Language Models, House of Lords Aug 2023
- Non-Archimedean SYZ and Periods, Universität Regensburg Aug 2022
- Temkin's Metrization of pluricanonical forms, KU Leuven Reading Seminar Mar 2022
- An Introduction to Logarithmic Geometry, London Junior Number Theory Seminar Mar 2022
- HMS of \mathbb{P}^1 and $\mathbb{P}^1 \setminus \{3 \text{ pts}\}$, Homological Mirror Symmetry Learning Seminar Feb 2022
- Non-Archimedean K -stability, Birational Geometry Learning Seminar Dec 2022
- Comparison of Adic and Berkovich Spaces, Non-Archimedean Geometry Study group (co-organiser) Dec 2021
- Kulikov Models, K3 Degenerations Study Group Nov 2021
- An Introduction to Logarithmic Geometry, Imperial Junior Geometry Nov 2021
- Classification and Minimal Model Program for Surfaces, K3 Degenerations Study Group Jul 2021
- Mirror symmetry and p -adic integration, London Junior Number Theory (co-organiser) June 2021
- Ampleness and Serre Duality, K3 Degeneration Study Group March 2021
- The Kuga-Satake Construction, K3 Study Group Feb 2021
- A Brief Introduction to Mirror Symmetry, KCL+UCL Junior Geometry Dec 2020
- The Divisor-Line Bundle Correspondence, Imperial Junior Geometry Nov 2020
- Coherent Cohomology with Compact Support, London Number Theory Study Group Oct 2020
- Obstruction to rational points, Étale Homotopy Study Group (co-organiser) Sept 2020
- Grothendieck-Teichmüller Lie Algebras, ATOM Summer School Jul 2020
- Non-Archimedean Mirror Symmetry Lightning Talk, ATOM Summer School Jul 2020
- The role of Shimura varieties in the Local Langlands Correspondence May 2020

TEACHING

- TA for Lebesgue Measure and Integration, Imperial College Jan - Mar 2022
- TA for Linear Algebra and Groups, Imperial College Jan - Mar 2022
- Demonstrator for JMC Analysis, Linear Algebra and Groups, Imperial College Nov - Mar 2022
- TA for Introduction to University Maths, Imperial College Oct-Nov 2021
- TA for Linear Algebra and Groups, Imperial College Oct 2020 - Mar 2021

UNDERGRADUATE RESEARCH

- **The Shape of Elliptic Curves:** supervised by Professor J A Thorne (Department of Pure Mathematics and Mathematical Statistics, University of Cambridge), funded by London Mathematical Society Undergraduate Research Grant £2000, Summer 2018
- **Depletion Interaction:** supervised by Dr Thierry Savin (Dynamics of Living Matter Research group, University of Cambridge), funded by Centre for Mathematical Sciences (Cambridge) £2000, Summer 2018
- **Noncommutative Riemannian geometry of graphs and finite groups:** supervised by Professor Shahn Majid (Queen Mary, University of London), funded by Trinity College, Cambridge £600, Summer 2017