Xihang Chen

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Personal Profile

I am a researcher in Health Data Science at University of Oxford, the projects that I am currently working on including EHDEN Parkinsonism study and UCB Re-fracture study. I was a MMATH student at University of Oxford before that, with my final year thesis being on Algebraic Number Theory. I also enjoyed other branches of mathematics including mathematical modelling in biology, algebra and probability.

Education

Master of Mathematics, University of Oxford - Distinction *October 2021 - June 2022*

Part C: *Distinction* 76% - Rank: 21/79

Dissertation: Chabauty Techniques in Number Theory, supervised by Professor Victor Flynn. 70%

- Studied the group structure of curves of genus 1 and 2 including different methods of rank computations.
- Investigated Chabauty Techniques for curves of genus 1 and 2, refined the idea of Elliptic Curve Chabauty.
- Studied and applied the covering technique to a curve of genus 2.

Bachelor of Mathematics, University of Oxford - First Class *October 2018 - June 2021*

Part B: *First Class* 77% - Rank: 13/128

Part A: *Honours Pass* 77% - Rank: 12/132

Preliminary: *Pass* 63%

Project Undertaken: Computational Mathematics (MATLAB) Projects. 80%

- MATLAB Project 1: Solving nonlinear equations.
- MATLAB Project 2: Solving an initial value problem.

A Levels, Maiden Erlegh School *September 2016 - June 2018*

A Levels: Mathematics - A*, Further Mathematics - A*, Chemistry - A, Chinese - A.

Skills Summary

- **Typesetting**: Proficient in LaTeX.
- **Programming**: Excellent in R. Proficient in Python. Familiar with MATLAB and SQL.
- **Other skills**: Familiar in computational algebra systems including SageMath and Magma. Proficient in Manim.

Experience

Researcher in Health Data Science, University of Oxford [full time] *October 2022 until now*

Design and programme analytical pipelines in R for the analysis of routinely collected data in OMOP Common Data Model.

Presentations and Talks

- **Oral presentation of the thesis**: My viva on *Chabauty Techniques in Number Theory.*
- **International Society for Pharmacoepidemiology (ICPE23)**: Spotlight Poster: *Incidence and prevalence of Parkinson's disease and utilisation of antiparkinson treatments: a population-based cohort study*

Awards and Achievements

- College Book Prizes — *St Peter's College, University of Oxford*
- Barron Scholarships — *St Peter's College, University of Oxford*
- Collection Prizes (3 times) — *St Peter's College, University of Oxford*
- Ballard Cup - Academic Excellence — *Maiden Erlegh School*
- UKMT Maths Challenge silver winner (2 times) — *UKMT*
- 100% in Quantum Theory, Part A — *Mathematical Institute, University of Oxford*
- 97% in Galois Theory, Part B — *Mathematical Institute, University of Oxford*
- 93% in Linear Algebra, Part A — *Mathematical Institute, University of Oxford*
- 93% in Nonlinear Systems, Part B — *Mathematical Institute, University of Oxford*