Xihang Chen

Work Email: xihang.chen@ndorms.ox.ac.uk
Personal Email: xihang_chen@hotmail.com
Work Website: https://www.ndorms.ox.ac.uk/team/xihang-chen
Personal Website: https://chen-xihang.github.io/

PERSONAL PROFILE

I am a research assistant in Health Data Science at NDORMS, University of Oxford, where my main responsibility involves programming in R to answer healthcare research questions. Before that I have completed Integrated Master's in Mathematics (MMATH) from University of Oxford. I am looking to apply my mathematics and programming background to research opportunities.

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. Supervisor: Professor Victor Flynn.   70%
- Studied 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 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.

EXPERIENCE

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

  Design and programme analytical pipelines in R for the analyses using routinely collected data in OMOP (Observational Medical Outcomes Partnership) Common Data Model.

- Lead Data Scientist on EHDEN (European Health and Data Evidence Network) funded *Parkinson's Study*.

- Lead Data Scientist on UCB funded *Refracture Study*.

- Author and maintainer of CRAN package *CohortSymmetry*.

- Author and contributor of CRAN packages including *CohortConstructor*, *DrugUtilisation*, *omock*, *CodelistGenerator* and *PatientProfiles*.

TEACHING

- Tutor of Mathematics at VarsityTutors, CamExpress and Mathlete Tuition:
  Provided mock maths interviews, and tutored A Level (UK) and College Level (US) mathematics including Calculus and Linear Algebra.

  Oct 2023 until now

- Teaching Assistant at Oxford Summer School 2024: Real World Evidence using the OMOP Common Data Model   *June 2024*

PRESENTATIONS AND TALKS

- **Oral presentation of the thesis (2022)**: My viva on *Chabauty Techniques in Number Theory*.

- **International Society for Pharmacoepidemiology (ICPE) Conference (2023)**: Spotlight Poster: *Incidence and prevalence of Parkinson's disease and utilisation of antiparkinson treatments: a population-based cohort study.*

- **World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (WCO IOF-ESCEO) Conference (2024)**: Poster: *Subsequent Fractures in Postmenopausal Women with Fragility Fractures: Incidence and Patient Characteristics from Six European Countries.*

- **OHDSI Europe Symposium (2024)**: Software Demo: *CohortSymmetry: an R package for Prescription Sequence Symmetry Analysis using OMOP CDM.*

- **International Society for Pharmacoepidemiology (ICPE) Conference (2024)**: Oral presentation: *Using Prescription Symmetry Sequence Analysis in the context of Antiparkinsonian Treatments in the United Kingdom.*

PUBLICATIONS

- **Chen X**, Barclay NL, Pineda-Moncusí M, Català Sabaté M, Molina-Porcel L, Man WY, Delmestri A, Prieto-Alhambra D, Jödicke A, Newby D. Change in incidence and prevalence of parkinsonism: A population-based cohort study in the United Kingdom. (**2024**), *medRxiv.* DOI: 10.1101/2024.09.19.24313907

- Barclay NL, Pineda-Moncusí M, Jödicke A, Prieto-Alhambra D, Raventós B, Newby D Delmestri A, Man WY, **Chen X**, Català Sabaté M. The impact of the UK COVID-19 lockdown on the screening, diagnostics and incidence of breast, colorectal, lung and prostate cancer in the UK: a population-based cohort study. (**2024**), *Frontiers in Oncology.* DOI: 10.3389/fonc.2024.1370862

SKILLS SUMMARY

- **Typesetting**:   Advanced in LaTeX.

- **Programming**:   Advanced in R (R packages, Quarto presentation, R shiny). Proficient in Python and MATLAB. Competent in SQL.

- **Other skills**:   Competent in SageMath, Magma and Manim.

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*
- 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*