

# Haocong(David) Guo

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## RESEARCH INTERESTS

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The interaction between algebraic, combinatorial and geometric aspects of group theory.

## EDUCATION

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|-------------|--|
| 2021 - 2025 | PhD in MATHEMATICS, <b>University of Bristol</b><br>Supervisor: Matthew Tointon  |
| 2016 - 2020 | Master's in MATHEMATICS, <b>University of Warwick</b><br>Thesis supervisor: Derek Holt<br>Thesis topic: The complexity of the compressed word problem for finitely generated free groups |

## PAPERS

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### In progress

1. Residually finite groups with uniformly almost flat quotients (With Matthew Tointon)
2. The Conjugacy Ratio of abelian-by-cyclic groups

## TALKS GIVEN

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| Oct 2024  | Bristol Combinatorics Seminars, <b>University of Bristol</b>   |
| Feb 2024  | Bristol Junior Algebra and Combinatorics Seminar, <b>University of Bristol</b><br>Uniformly almost flat coset space in polycyclic groups |
| July 2023 | Postgraduate Group Theory Conference 2023, <b>Heriot-Watt University</b><br>Uniformly almost flat coset space in polycyclic groups       |
| May 2023  | Bristol Junior Geometry Seminar, <b>University of Bristol</b><br>Uniformly almost flat coset space in polycyclic groups                  |
| Dec 2022  | Seminars on Groups and Graphs (online), <b>SUSTech</b><br>Random Walks on Vertex-Transitive Graphs with Moderate Growth                  |
| Oct 2022  | Random walks and related random topics, <b>University of Göttingen</b><br>Random Walks on Vertex-Transitive Graph with Moderate Growth   |

## OTHER CONFERENCES

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| July 2024 | Summer School on Symmetry and Randomness, <b>University of Bristol</b> |
| Apr 2024  | Young geometric group theory XII, <b>University of Bristol</b>         |

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| June 2023 | Probabilistic Group Theory, <b>University of Bristol</b>                                  |
| Jan 2023  | LMS Regional Meeting, Geometric Group Theory, <b>University of Southampton</b>            |
| Sept 2022 | Young Group Theorists Workshop, <b>SwissMAP Research Station</b>                          |
| July 2022 | Graduate Student Concentration Week on Metric Geometry, <b>Texas A &amp; M University</b> |
| July 2022 | Postgraduate Group Theory Conference, <b>King's College London</b>                        |

## TEACHING EXPERIENCE

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### University of Bristol (2021-present):

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| 2024 - 2025 | MATH10011 Analysis, Support Class Teacher                |
| 2024 - 2025 | MATH33300 Group theory, Support Class Teacher            |
| 2023 - 2024 | MATH10010 Proofs and Group Theory, Support Class Teacher |
| 2022 - 2023 | MATH10010 Linear algebra, Support Class Teacher          |
| 2022 - 2023 | MATH33300 Group theory, Support Class Teacher            |

### Before 2021:

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| 2021 - 2022  | Learning support tutor, Havering College, London  |
| 22017 - 2017 | MA131 Analysis, Peer Tutor, University of Warwick |

## VOLUNTEERING AND OUTREACH

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| July 2019 | Team Guide for IMO, <b>University of Bath</b>        |
| Aug 2019  | Volunteer teacher and trainer, <b>Haryana, India</b> |

## SERVICES

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| 2025           | Postgraduate Group Theory Conference, <b>University of Bristol</b> , Co-organizer             |
| 2024 - present | Bristol Junior Algebra and Combinatorics Seminar, <b>University of Bristol</b> , Co-organizer |