

Haocong (David) Guo

WEBSITE: <https://dguo97.github.io/>

RESEARCH INTERESTS

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

EDUCATION

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|-------------|--|
| 2021 - 2025 | PhD in MATHEMATICS, University of Bristol
Supervisor: Matthew Tointon
Thesis title: Some topics related to growth in soluble groups |
| 2016 - 2020 | Master's in MATHEMATICS, University of Warwick
Thesis supervisor: Derek Holt
Thesis title: The complexity of the compressed word problem for finitely generated free groups |

TALKS

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| Feb 2025 | Semigroups Seminar, University of Manchester
The Conjugacy Ratio of abelian-by-cyclic groups |
| Feb 2025 | Algebra Seminar, University of Warwick
Residually finite groups with uniformly almost flat quotients |
| Jan 2025 | MAXIMALS Seminar, Heriot-Watt University
The Conjugacy Ratio of abelian-by-cyclic groups |
| Oct 2024 | Bristol Combinatorics Seminars, University of Bristol
Residually finite groups with uniformly almost flat quotients |
| Feb 2024 | Bristol Junior Algebra and Combinatorics Seminar, University of Bristol
Uniformly almost flat coset space in polycyclic groups |
| July 2023 | Postgraduate Group Theory Conference 2023, Heriot-Watt University
Uniformly almost flat coset space in polycyclic groups |
| May 2023 | Bristol Junior Geometry Seminar, University of Bristol
Uniformly almost flat coset space in polycyclic groups |
| Dec 2022 | Seminars on Groups and Graphs (online), SUSTech
Random Walks on Vertex-Transitive Graphs with Moderate Growth |
| Oct 2022 | Random walks and related random topics, University of Göttingen
Random Walks on Vertex-Transitive Graph with Moderate Growth |

OTHER CONFERENCES

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

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

TEACHING EXPERIENCE

University of Bristol (2021-present):

- 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:

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

PROGRAMMING MODULES TAKEN

University of Warwick

- MA117 Programming for Scientists, **Java**, (93%)
- MA124 Mathematics by Computer, **MATLAB**, (89%)
- IL027 Interdisciplinary Computer Modelling, **Julia**, (90%)
- PX277 Computational Physics, **Python**, (100%)

Havering Sixth Form College

- A Level Computer Science, **Visual Basic**, (A*)

VOLUNTEERING AND OUTREACH

- July 2019 | Team Guide for Thailand team in IMO, **University of Bath**
- Aug 2019 | Volunteer teacher and trainer, **Haryana, India**

SERVICES

- 2024 - 2025 | Postgraduate Group Theory Conference 2025, **University of Bristol**, Co-organiser
- 2024 - 2025 | Bristol Junior Algebra and Combinatorics Seminar, **University of Bristol**, Co-organiser

OTHER

Languages | English, Chinese.

Programming | Python, Java, MATLAB, Visual Basic, Julia.