

# Hong Yi Huang

☎ +44 7579956791 or +86 13530464479

✉ [hy.huang@bristol.ac.uk](mailto:hy.huang@bristol.ac.uk)

🌐 [hongyihuang328.github.io](https://hongyihuang328.github.io)

School of Mathematics, University of Bristol, Bristol BS8 1UG, UK

## Research interests

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- Group theory (finite and algebraic)
- Algebraic combinatorics
- Representation theory

## Education

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School of Mathematics, University of Bristol (UoB)

United Kingdom

- PhD in Mathematics

Jan 2021 –

- Supervisor: Professor Tim Burness
- Scholarship: China Scholarship Council

Department of Mathematics, Southern University of Science and Technology (SUSTech)

China

- Bachelor of Science
- Supervisor: Professor Cai Heng Li
- Thesis: On valency problems of Saxl graphs of almost simple primitive groups with soluble stabiliser

Sept 2016 – July 2020

## Distinctions

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MathSciNet Reviewer, Mathematical Reviews, American Mathematical Society

since 2023

Member, Combinatorial Mathematics Society of Australasia

2022

China Scholarship Council, UoB

2021–25

Outstanding undergraduate thesis, SUSTech

2020

First-class scholarship, SUSTech

2017–18

First prize, Chinese Mathematics Competition (Guangdong)

2017

## Conferences and workshops

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CMI-HIMR Summer School: Probabilistic Group Theory, UoB

June 2023

Fry Conference Series: New Perspectives in Pure Mathematics, UoB

Mar 2023

Young Group Theorists Workshop, SwissMAP, Les Diablerets, Switzerland

Sept 2022

Groups St Andrews, Newcastle

Aug 2022

Simple groups, representations and applications, Isaac Newton Institute, University of Cambridge

July 2022

Groups and Graphs, Jiangxi University of Science and Technology (online)

July 2022

23rd Postgraduate Group Theory Conference, London

July 2022

43rd Australasian Combinatorics Conference, Melbourne (online)

Dec 2021

Groups, Graphs and Combinatorics, Shenzhen (online)

Nov 2021

LMS Graduate Student Meeting, London Mathematical Society (online)

Nov 2021

Workshop on Group Actions and Transitive Graphs, Kunming

Jan 2021

Workshop on Combinatorics and Graph Theory, Shenzhen	Oct 2020
International Conference on Algebraic Combinatorics, Jiaozuo	Sept 2019
The Third International Conference on Group Actions and Transitive Graphs, Shenzhen	Oct 2018

## Journal publications and preprints

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- [4] Base sizes of primitive groups of diagonal type  
37 pages, submitted, arXiv:2303.14290
- [3] On base sizes for primitive groups of product type  
joint with T.C. Burness  
**Journal of Pure and Applied Algebra** 227 (2023), 107228, 43 pp
- [2] On the Saxl graphs of primitive groups with soluble stabilisers  
joint with T.C. Burness  
**Algebraic Combinatorics** 5 (2022), 1053–1087
- [1] On valency problems of Saxl graphs  
joint with J. Chen  
**Journal of Group Theory** 25 (2022), 543–577

## Selected talks

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### 2023

- Bases for permutation groups*, Junior London Algebra Colloquium, Imperial College London 23 Mar
- Symmetry breaking on primitive groups*, Seminars on Groups and Graphs, SUSTech 4 Mar

### 2022

- Base-two primitive permutation groups*, Young Group Theorists Workshop, SwissMAP, Les Diablerets 5 Sept
- Bases, distinguishing partitions and probabilistic methods*, University of Melbourne 18 Aug
- Base-two primitive permutation groups*, Groups St Andrews, Newcastle 4 Aug
- Base-two primitive permutation groups and their Saxl graphs*. Groups and Graphs 24 July
- Base-two primitive permutation groups*. 23rd Postgraduate Group Theory Conference 8 July
- Bases for primitive permutation groups*. Group Theory Seminar, SUSTech 24 May
- Regular orbits of primitive groups on power sets*. Group Theory Seminar, SUSTech 19 Feb

### 2021

- Base-two primitive permutation groups and their Saxl graphs*. 43rd Australasian Combinatorics Conference 13 Dec
- Regular suborbits of finite primitive groups*. Groups, Graphs and Combinatorics 14 Nov
- Base-two primitive permutation groups and their Saxl graphs*. LMS Graduate Student Meeting 8 Nov
- The distinguishing number of permutation groups*. Group Theory Seminar, SUSTech 9 Oct
- Groups, graphs and transitivity*. Junior Algebra Colloquium, UoB 21 May
- The probabilistic method in group theory*. Discrete Mathematics Seminar, SUSTech 22 Apr
- On valency problems of Saxl graphs*. Workshop on Group Actions and Transitive Graphs 2 Jan

### 2020

- On valency problems of Saxl graphs*. Discrete Mathematics Seminar, SUSTech 26 Nov
- On valency problems of Saxl graphs*. SUSTech 17 Nov

## Seminar organisations

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Seminars on Groups and Graphs, SUSTech (online), <https://www.gtseminar.xyz/>

2021–23

## Teaching

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### **Tutorial leader, School of Mathematics, UoB**

- 2021–2022 TB1: MATH10010 Introduction to Proofs

### **Teaching assistant, Department of Mathematics, SUSTech**

- 2019–2020 Spring: MA109 Advanced Linear Algebra
- 2019–2020 Fall: MA107 Advanced Linear Algebra I
- 2018–2019 Spring: MA104b Linear Algebra II

### **Homework marker, Department of Mathematics, SUSTech**

- 2020–2021 Spring: MA321 Group Representation Theory, and MA219-16 Elementary Number Theory
- 2019–2020 Fall: MA321 Group Representation Theory, and MA219 Abstract Algebra (H)
- 2018–2019 Spring: MAT8010 Combinatorics (PG)
- 2017–2018 Fall: MA219-16 Elementary Number Theory, and MA213-16 Mathematical Analysis

## Research visits

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2021: SUSTech, China (2 months)

2020: SUSTech, China (6 months)