

# Ayesha Hussain

School of Mathematics – University of Bristol – Bristol, UK, BS8 1TH

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*PhD student interested in Analytic Number Theory, with particular focus on random multiplicative functions.*

(Correct as of 4th February 2022)

## Research

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**The Limiting Distribution of Character Sums:** <https://doi.org/10.1093/imrn/rnab194>

Published at 'International Mathematical Research Notices' (IMRN)

**The Limiting Distribution of Real Character Sums:**

In Progress

## Education

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**University of Bristol**

*PhD Student*

2018–Present

Advised by Dr Jonathan Bober.

**University of Durham (Grey College)**

*Integrated Masters Student, 1st Class*

2013–2017

Final year project titled *The Rankin-Selberg Bound: Bounding the Fourier Coefficients of Cusp Forms Using the Rankin-Selberg Method.*

Advised by Dr Jens Funke and Dr Thanasis Bouganis.

## Teaching Experience

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**University of Bristol**

*Undergraduate Tutor*

Autumn 2018 – Present

- Third year Number Theory homework marker (Spring 2022)
- First year Mathematics 1A20 module tutor (Autumn 2021)
- Mathematical Investigations moderator (Spring 2021)
- Exam marker Mathematics 1A20 module (Spring 2021)
- Perspectives in Mathematics moderator (Autumn 2020)
- First year Mathematics 1A20 module tutor (Autumn 2020)
- Analysis B module tutor (Spring 2020),
- Number Theory module homework marker (Spring 2020),
- First year Mathematics 1A20 module tutor (Autumn 2019),
- Engineering Mathematics Teaching Assistant (Autumn 2019),
- Numerical Analysis Teaching Assistant (Spring 2019),
- First year Mathematics 1A20 module tutor (Autumn 2018).

**University of Durham**

*Homework Marker*

Autumn 2016 – Spring 2017

Second year Numerical Analysis module homework marker.

## Miscellaneous.....

### Self Employed

*Private Tutor*

*2011 – Present*

One-on-one Mathematics tutor.

- Preparing pupils for 11+, 13+, GCSE, A Level and University Admission examinations.

## Seminar Talks

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### University of Warwick

*Warwick Number Theory Seminar*

*January 2021*

Distributions of Character Sums

### University of Bristol

*Postgraduate Seminar*

*October 2021*

The Man, The Myth, The Legend(re)

### University of Oxford (Virtual)

*Oxford Junior Number Theory Seminar*

*May 2021*

Distributions of Character Sums

### University of Montreal (Virtual)

*Mobius ANT Seminar*

*March 2021*

Distributions of Character Sums

### University College London

*London Junior Number Theory Seminar (Virtual)*

*March 2021*

What Is a Random Multiplicative Function

### University of Bristol (Virtual)

*Postgraduate Seminar*

*November 2020*

Introduction to Random Multiplicative Functions

### University of Bristol

*Linfoot Seminar*

*March 2020*

Distributions of Character Sums

### University of Bristol

*Postgraduate Seminar*

*November 2019*

Paths of Dirichlet Characters

## Conference Talks

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### University of Bristol (Virtual)

*MINGLE 2021*

*September 2021*

The Probability Behind Yahtzee

### Virtual Conference

*CANT Workshop*

*May 2021*

Distributions of Character Sums

### Virtual Conference

*Women In Number Theory and Geometry*

*January 2021*

Distributions of Character Sums

### Virtual Conference

*3rd BYMAT Conference*

*December 2020*

Distributions of Character Sums

**University of Bristol (Virtual)***MINGLE 2020**Animals and Counting**September 2020***University of Warwick***Young Researchers in Algebraic and Analytic Number Theory**Paths of Dirichlet Characters**November 2019*

## Conferences

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**University of Bristol***Young Researchers in Number Theory, Co organiser**August 2021***Virtual Conference/Paris***Summer School in Analytical Number Theory**June 2021***University of Bristol***Young Researchers in Mathematics, Co organiser**June 2021***City University of New York***CANT Workshop**May 2021***Insitut Mittag Leoffler***Number Theory Research Program**January-March 2021***Virtual Conference***Women In Number Theory and Geometry**January 2021***Virtual Conference***3rd BYMAT Conference**December 2020***Virtual Conference***Black Heroes of Mathematics Conference**October 2020***University of Bristol***Heilbronn Annual Conference 2020**September 2020***University of Warwick***Young Researchers in Algebraic Number Theory**November 2019***University of Oxford***Warwick-Oxbridge-Manchester-Bristol-London (WOMBL)**September 2019***University of Bristol***Heilbronn Annual Conference 2019**September 2019***Grand Hotel San Michele, Cetraro, Italy***Symposium on Analytic Number Theory**July 2019***University of Bristol***CMI-HIMR Summer School in Computational Number Theory**June 2019***University of Mississippi***NSF-CBMS Conference: L-Functions and Multiplicative Number Theory**May 2019***University of Cambridge***Warwick-Oxbridge-Manchester-Bristol-London (WOMBL)**January 2019***University of Sheffield***Young Researchers in Algebraic Number Theory**November 2018*

## Outreach

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### University of Bristol

*Women and Non-Binary People in Maths: Opportunities for the future*  
Conference co-organiser for the 2 day event.

November 2021

### University of Bristol

*Women and Non-Binary People in Maths: Opportunities for the future*  
Conference co-organiser for the 2 day event.

November 2020

### University of Bristol

~~*Women in Mathematics Research*~~

~~June 2020~~

~~Main conference organiser promoting studying Maths to A-level students.~~

### University of Bristol

*Women and Non-Binary People in Maths: Opportunities for the future*  
Conference co-organiser for the 2 day event.

November 2019

### University of Bristol

*Women in Mathematics Research*  
Gave a workshop on aspects of my research.

September 2019

### Cheltenham Science Festival

*Discover Zone Mathematics Stand*  
Helped showcase interactive Mathematics exhibits for the general public.

June 2019

### Walthamstow Hall Senior School

*Mathematics at Undergraduate Level and Beyond*  
Gave talks to years 10-12 about Mathematics at University.

November 2018

### Francis Holland School

*Mathematics: Applications after School*  
Gave talks to years 10-12 about Mathematics at University.

November 2018

## Miscellaneous

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**Programming Experience:** Experience using Latex, Python, SQL, HTML, CSS.

**Seminar Co-organiser:** Linfoot Seminar.

**Conference Co-organiser:** MINGLE 2019 (annual Bristol postgraduate conference).

**Conference Co-organiser:** Young Researchers in Mathematics 2021, Young Researchers in Algebraic and Analytic Number Theory 2021.

**Conference Organiser:** 'Women in Mathematics Research Workshop' 2020 with AMSP.

**Reading Group Organiser:** Random Multiplicative Functions Reading Group.

## References

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**Dr Jonathan Bober**

jwbober@gmail.com

*University of Bristol*

PhD supervisor.

**Dr Jens Funke**

jens.funke@durham.ac.uk

*University of Durham*

Final year project supervisor.

**Dr Thanasis Bouganis**

athanasios.bouganis@durham.ac.uk

*University of Durham*

Final year project supervisor.