

# Andrei Seymour-Howell

---

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

andreiseymourhowell@gmail.com  
<https://aseymourhowell.github.io>

## Employment

2023–Present    Postdoctoral researcher, University of Bristol.

## Education

2019–2023    PhD in Mathematics, University of Bristol. Supervised by Andrew Booker.

2015–2019    MMath, University of Nottingham.

## Research Interests

Automorphic forms, computational number theory, L-functions, trace formula.

## Publications and Preprints

- [1] Rigorous computation of Maass cusp forms of squarefree level. *Research in Number Theory, ANTS XV collection*, 8, 10 2022
- [2] (With Ce Bian, Andrew Booker, Austin Docherty and Michael Jacobson, Jr.). Unconditional computation of the class groups of real quadratic fields. *To appear in Contemp. Math. as part of the LuCaNT collection*
- [3] (With David Lowry-Duda). Rigorous implementation of Hejhal’s algorithm. In preparation

## Talks

- *Unconditional computation of the class groups of real quadratic fields*, Linfoot Seminar, University of Bristol, November 2023.
- *Unconditional computation of the class groups of real quadratic fields*, LuCaNT, ICERM, Brown University, July 2023.
- *Rigorous computation of Maass cusp forms of squarefree level*, ArStAFANT Workshop, EPFL, June 2023.
- *Numerical computations of Maass cusp forms*, Canberra Number Theory Seminar, UNSW Canberra, October 2022.
- *Numerical verification of Maass cusp forms*, Automorphic Forms Conference, Erdős Center, Rényi Institute, September 2022.
- *Numerical verification of Maass cusp forms*, ELAZ conference, Poznan University, August 2022.
- *Numerical verification of Maass cusp forms*, Algorithmic Number Theory Symposium (ANTS) XV, University of Bristol, August 2022.
- *Numerical verification of Maass cusp forms*, Early Career Researchers in Mathematics, University College London, June 2022.
- *Numerical computations of Maass cusp forms*, Young Researchers in Mathematics, University of Bristol, June 2021.

- *Numerical computations of Maass cusp forms*, London Junior Number Theory Seminar, University College London, May 2021.
- *Numerical verification of Maass cusp forms*, Linfoot Seminar, University of Bristol, April 2021.
- *The magic of  $0x5f3759df$* , Postgraduate Seminar, University of Bristol, March 2021.
- *Numerical computations of the Riemann zeta function*, Postgraduate Seminar, University of Bristol, March 2020.

## Teaching

Spring 2022	Teaching assistant, University of Bristol; 3rd year undergraduate course “Number Theory”.
Autumn 2020	Demonstrator, University of Bristol; 3rd year undergraduate course “Perspectives in Mathematics”.
Autumn 2020	Teaching assistant, University of Bristol; 1st year undergraduate course “Mathematics 1A20”.
Autumn 2019– Spring 2020	Teaching assistant, University of Bristol; 1st year undergraduate course “Linear Algebra”.
Autumn 2016– Spring 2017	Pass Leader, University of Nottingham.

## Conferences attended

July 2023	<i>LuCaNT Conference</i> - ICERM, Brown University.
July 2023	<i>Murmurations in Arithmetic Workshop</i> - ICERM, Brown University.
June 2023	<i>ArStAFANT Workshop</i> - EPFL, Lausanne.
May 2023	<i>Spring school in Arithmetic Statistics</i> - CIRM, Luminy.
Nov. 2022	<i>The Great Western Number Theory Seminar</i> - University of Bristol.
Sep. 2022	<i>Automorphic Forms Conference</i> - Erdős Center, Rényi Institute, Budapest.
Aug. 2022	<i>Automorphic Forms Summer School</i> - Erdős Center, Rényi Institute, Budapest.
Aug. 2022	<i>Elementary and Analytic Number Theory (ELAZ) 2022</i> - Poznan University.
Aug. 2022	<i>Algorithmic Number Theory Symposium (ANTS) XV</i> - University of Bristol.
Jul. 2022	<i>Number Theory Informed by Computation, PCMI Graduate Summer School</i> - Park City Mathematics Institute, Utah.
Jun. 2022	<i>Early Career Researchers in Mathematics</i> - University College London.
Apr. 2022	<i>The Great Western Number Theory Seminar</i> - University of Bath.
Apr. 2022	<i>Warwick-Oxford-Manchester-Bristol-London (WOMBL)</i> - University of Oxford.
Jun. 2021	<i>Young Researchers in Algebraic and Analytic Number Theory</i> - University of Bristol.
Jun. 2021	<i>Young Researchers in Mathematics</i> - University of Bristol.
Jul. 2020	<i>Algorithmic Number Theory Symposium (ANTS) XIV</i> - University of Auckland.
Jun. 2020	<i>Automorphic Forms Conference</i> - Erdős Center, Rényi Institute, Budapest.
Nov. 2019	<i>Young Researchers in Algebraic and Analytic Number Theory</i> - University of Warwick.

## Awards

2018            *IMA prize* - University of Nottingham.  
2015–2017    *School achievement prize 3 times* - University of Nottingham.

## Service

2022–2023    *Co-organiser of Linfoot Seminar* - University of Bristol.  
2021–2022    *Co-organiser of Pre-Heilbronn Seminar* - University of Bristol.  
2021           *Co-organiser of Young Researchers in Algebraic and Analytic Number Theory conference 2021* - University of Bristol.  
2020           *Co-organiser of MINGLE 2020 (Annual Bristol postgraduate conference)* - University of Bristol.

## Programming

Proficient in C, Python and SageMath. Experience using Pari/GP, Julia and MATLAB.