

Andrei Seymour-Howell

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Employment

2023–Present Research associate, 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] (With Andrew Booker, Min Lee, David Lowry-Duda and Nina Zubrilina). Murmurations of Maass forms. *Preprint arXiv:2409.00765*
- [2] (With Ce Bian, Andrew Booker, Austin Docherty and Michael Jacobson, Jr.). Unconditional computation of the class groups of real quadratic fields. In *LuCaNT: LMFDB, computation, and number theory*, volume 796 of *Contemp. Math.* Amer. Math. Soc., [Providence], RI
- [3] Rigorous computation of Maass cusp forms of squarefree level. *Research in Number Theory, ANTS XV collection*, 8, 10 2022

Talks

- *Murmurations of Maass Forms*, RIMS Workshop 2024 Analytic Number Theory and Related Topics, Kyoto University, October 2024.
- *Murmurations in Number Theory*, Colloquium Talk, Sophia University, Tokyo, October 2024.
- *Unconditional computation of the class groups of real quadratic fields*, Building Bridges 6, CIRM, Luminy, September 2024.
- *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

Nov. 2024 *Murmurations in Arithmetic Geometry and Related Topics* - Simons Center for Geometry and Physics, Stonybrook University

Oct. 2024 *RIMS Workshop 2024 Analytic Number Theory and Related Topics* - Kyoto University

Sep. 2024 *Building Bridges: 6th EU/US Summer School and Workshop on Automorphic Forms and Related Topics* - CIRM , Luminy.

Aug. 2024 *Automorphic Forms Conference* - Erdős Center, Rényi Institute, Budapest.

July 2024 *Algorithmic Number Theory Symposium (ANTS) XVI* - MIT, Boston.

July 2023 *LuCaNT Conference* - ICERM, Brown University.

July 2023 *Murmurations in Arithmetic Workshop* - ICERM, Brown University.

June 2023 *ArStAFANT Workshop* - EPFL, Lausanne.

May 2023 *Spring school in Arithmetic Statistics* - CIRM, Luminy.

Nov. 2022 *The Great Western Number Theory Seminar* - University of Bristol.

Sep. 2022 *Automorphic Forms Conference* - Erdős Center, Rényi Institute, Budapest.

Aug. 2022 *Automorphic Forms Summer School* - Erdős Center, Rényi Institute, Budapest.

Aug. 2022 *Elementary and Analytic Number Theory (ELAZ) 2022* - Poznan University.

Aug. 2022 *Algorithmic Number Theory Symposium (ANTS) XV* - University of Bristol.

Jul. 2022 *Number Theory Informed by Computation, PCMI Graduate Summer School* - Park City Mathematics Institute, Utah.

Jun. 2022 *Early Career Researchers in Mathematics* - University College London.

Apr. 2022 *The Great Western Number Theory Seminar* - University of Bath.

Apr. 2022 *Warwick-Oxbridge-Manchester-Bristol-London (WOMBL)* - University of Oxford.

Jun. 2021 *Young Researchers in Algebraic and Analytic Number Theory* - University of Bristol.

Jun. 2021 *Young Researchers in Mathematics* - University of Bristol.

Jul. 2020 *Algorithmic Number Theory Symposium (ANTS) XIV* - University of Auckland.

Jun. 2020 *Automorphic Forms Conference* - Erdős Center, Rényi Institute, Budapest.

Nov. 2019 *Young Researchers in Algebraic and Analytic Number Theory* - University of Warwick.

Awards

2018 *IMA prize* - University of Nottingham.

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

Service

2024–Present *Co-organiser of Heilbronn Seminar* - University of Bristol.

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 and Julia.