

NICHOLAS JACKSON

FULL NAME Nicholas James Jackson
EMAIL Nicholas.Jackson@warwick.ac.uk

ACADEMIC QUALIFICATIONS

1981–1991 Nottingham High School **General Certificate of Secondary Education**
Mathematics (A), Physics (A), Chemistry (A), French (A),
Latin (B), English (B), Music (C), English Literature (C)
General Certificate of Education, Advanced Level
Mathematics (A), Further Mathematics (A), Physics (B)
Sixth Term Examination Papers
Further Mathematics A (2), Further Mathematics B (3)

1991–1994 University of York **Bachelor of Arts** in Mathematics
Class II(2) honours

1996–1997 University of Warwick **Master of Science** in Mathematics
Dissertation: *Knot Classification and Enumeration*
Supervisor: Brian Sanderson

1997–2004 University of Warwick **Doctor of Philosophy** in Mathematics
Dissertation: *Homological Algebra of Racks and Quandles*
Supervisor: Colin Rourke

2014–2015 University of Warwick **Postgraduate Award** in Technology Enhanced Learning
Project: *Using GeoGebra in Undergraduate Mathematics Teaching*

EMPLOYMENT HISTORY

Jul 1994 – Dec 1995 Programmer, Department of Mathematics, University of York
Jan 1996 – Oct 1996 Developer, Infocom UK Ltd
Oct 1997 – Jul 1999 Developer, Infocom UK Ltd
Aug 1999 – Nov 2002 Consultant, Parasol Solutions Ltd
Aug 2003 – Nov 2004 Developer, Eccleston and Hart Ltd, and NS Optimum Ltd
Nov 2004 – Oct 2014 Production editor, Mathematical Sciences Publishers
Nov 2004 – Oct 2017 Tutor and part-time teacher, University of Warwick
Oct 2016 – May 2020 Teaching Fellow, Department of Mathematics, University of Warwick
Oct 2017 – May 2020 Teaching Fellow, Department of Economics, University of Warwick
June 2020 – Senior Teaching Fellow / Assistant Professor,
Departments of Mathematics and Economics, University of Warwick

TEACHING

2006–2011 EC119 Mathematics for Economists
Topics include: set theory, real analysis, differential equations, linear algebra.

2007–2019 MA397 Consolidation
For struggling third-year mathematics students, revising core first and second year topics.

2011– EC119 Mathematical Analysis
Topics include: set theory, real analysis, differential equations.

2011– EC133 Linear Algebra
Topics include: vectors and matrices, matrix diagonalisation, vector spaces, quadratic forms.

2015– EC961 Introductory Mathematics and Statistics
For incoming economics MSc students. Topics include: matrix algebra, convexity, statistics.

Jun 2018 Python and R classes
For MRes and PhD students in Economics.

2018–2021 Personal Development Module

- 2019 – Activities for first-year economics students, to promote engagement and employability.
Real Analysis classes
For MSc students in Economics.
- 2019–2023 MA249 Algebra II
Core abstract algebra module for approximately 400 second year undergraduate students.
Topics include: group theory, rings and fields.
- 2023 – MA267 Groups and Rings
For second year undergraduate students on Maths joint degree programmes.
Topics include: group theory, rings and fields.
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PROFESSIONAL AND ACADEMIC AFFILIATIONS

- 1999 Member, London Mathematical Society
2016 Fellow of the Higher Education Academy
2016 STEM Ambassador
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UNIVERSITY RESPONSIBILITIES AND LEADERSHIP

- Sep 2019 – Aug 2022 Fellow, Warwick International Higher Education Academy
Co-Chair, Teaching Reward and Recognition Learning Circle (2021–2022)
Remained active as an Alumni Fellow
- Oct 2019 – Member, Undergraduate Appeals Committee Panel
Jan 2021 – Fellow, Warwick Institute of Engagement
Co-Chair, Promotion and Reward Learning Circle (2024–)
- Oct 2022 – Jul 2023 Panel member, 2023 Institutional Teaching and Learning Review,
Department of Classics and Ancient History
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STUDENTS SUPERVISED

Personal tutor to over 100 Mathematics and Economics BSc and MMath students since 2004.

MMATH PROJECTS

- 2005–2006 Craig Bowen, *Rack and quandle homology*; John Huddleston, *Khovanov homology*
2006–2007 Jamie Luo, *Khovanov homology*; Ben de Meza, *Vassiliev invariants*
2007–2008 Tom Boardman, *Khovanov homology*; Robert McKemey, *Category theory*;
Matthew Reynolds, *Category theory*
2009–2010 Robert Goss, *Khovanov homology*
2012–2013 Stephen Ashton, *Exotic spheres*
2013–2014 Abigail Linton, *Twisted Alexander polynomials*

MSc DISSERTATIONS

- 2018–2019 Xin Jing, Neeraja Nandini Satheesh Babu, Hao Wang

THIRD YEAR ESSAYS

- 2023–2024 Elly Burlacu, *Semigroups*; Alex Corabie, *Knot Invariants*
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PUBLICATIONS

- 1 NJ Jackson, *Extensions of racks and quandles*, Homology, Homotopy and Applications 7.1 (2005) 151–167, arXiv: math.CT/0408040
 - 2 NJ Jackson, *Rack and quandle homology* (2004), arXiv: math.CT/0411055
 - 3 NJ Jackson, *The development of academic dress in the University of Warwick*, Transactions of the Burgon Society 8 (2008) 10–59
 - 4 SK Friedl and NJ Jackson, *Approximations to the volume of hyperbolic knots*, in: *Twisted topological invariants and topology of low-dimensional manifolds*, ed. by T Morifuji, RIMS Kôkyûroku 1747, Kyoto (2011) 35–46, arXiv: 1102.3742
 - 5 NM Dunfield, SK Friedl, and NJ Jackson, *Twisted Alexander polynomials of hyperbolic knots*, Experimental Mathematics 21.4 (2012) 329–352, arXiv: 1108.3045
 - 6 NJ Jackson and CG Johnson, *Evolving unknotting strategies for knots and braids*, in: *Proceedings of the 1st Symposium on Nature Inspired Computing*, Birmingham (2012), arXiv: 1302.0787
 - 7 NJ Jackson, ed., *Ackermann's Costumes of the Universities of Oxford and Cambridge*, Burgon Society (2016)
 - 8 NJ Jackson, *A Course in Abstract Algebra*, in preparation, Oxford University Press (expected 2025)
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OUTREACH AND PUBLIC ENGAGEMENT

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|---------------------|--|
| 24 Mar 2008 | <i>The Mathematics of Knots</i> , talk at Orbital (Eastercon 2008) |
| 10 Apr 2009 | <i>The Poincaré Conjecture</i> , talk at LX (Eastercon 2009) |
| 3 Apr 2010 | <i>The Geometry Of The Place Was All Wrong</i> , talk at Odyssey (Eastercon 2009) |
| 30 Jun 2010 | <i>The Geometry Of The Place Was All Wrong</i> , talk at the Culham Centre for Fusion Energy |
| 24 Apr 2011 | <i>The Bits Between The Bits</i> , talk at Illustrious (Eastercon 2011) |
| 7 Apr 2012 | <i>Unsolvable Problems in Mathematics</i> , talk at Olympus (Eastercon 2012) |
| 17 Oct 2012 | <i>Outsider Mathematics</i> , talk at Coventry Sceptics in the Pub |
| Nov 2012 | <i>Poincaré Dodecahedral Space</i> , talk at MathsJam Gathering 2012 |
| 1 Apr 2013 | <i>Pure and Applied Mathematics</i> , talk at EightSquaredCon (Eastercon 2013) |
| Nov 2013 | <i>Hyperbolic Knots</i> , talk at MathsJam Gathering 2013 |
| 21 Apr 2014 | <i>Networks and Small Worlds</i> , talk at Satellite 4 (Eastercon 2014) |
| 14–18 Aug 2014 | Coordinator, academic poster session, Loncon 3 (World SF Convention 2014) |
| 15 Aug 2014 | Interview with Ian Stewart, Loncon 3 |
| 15 Aug 2014 | <i>What's New in Mathematics</i> , panel discussion at Loncon 3 |
| 18 Aug 2014 | <i>Knots in Non-Euclidean Space</i> , talk at Loncon 3 |
| Nov 2014 | <i>Sofia Kovalevskaya: Nihilist Girl</i> , talk at MathsJam Gathering 2014 |
| Mar 2015 – | Member, BrumSciComm science communication group, Birmingham |
| 5 Apr 2015 | <i>Quintic Equations: Symmetry and Tragedy</i> , talk at Dysprosium (Eastercon 2015) |
| Nov 2015 | <i>Émilie du Châtelet</i> , talk at MathsJam Gathering 2015 |
| May 2016 – | STEM Ambassador, STEMNet UK |
| Sep 2016 – Dec 2017 | Volunteer, Code Club, Earlsdon Library, Coventry |
| Nov 2016 | <i>Fractran</i> , talk at MathsJam Gathering 2016 |
| 17 Apr 2017 | <i>Mathematics and Language</i> , talk at Innominate (Eastercon 2017) |
| 7 Jun 2017 | <i>Mathematics and Art</i> , Aspiration Day talk, University of Warwick Arts Centre |
| 10 Jul 2017 | <i>Error Correcting Codes</i> , talk at Science and Survival 2017, University of Warwick |
| 12 Jul 2017 | <i>The Mathematics of Networks</i> , talk at Experience Warwick 2017, University of Warwick |
| Sep 2018 – | Volunteer, Coder Dojo, Central Library, Coventry |
| 2 Apr 2018 | <i>Women of Mathematics</i> , talk at Follycon (Eastercon 2018) |
| 14 May 2018 | <i>The Shape of Data</i> , talk at Pint of Science 2018, Coventry |
| 24 Sep 2018 | Quoted in <i>New Scientist</i> and <i>Popular Science</i> on the Riemann Hypothesis |
| 17 Oct 2018 | <i>Émilie du Châtelet</i> , Ada Lovelace Day talk to the Warwick Mathematics Society |
| Feb 2019 – | British Science Association Mathematics Section liaison |
| 7 Mar 2019 | <i>Introduction to Category Theory</i> , talk to the Warwick Mathematics Society |
| 21 Apr 2019 | <i>Maths creativity</i> , children's practical maths workshop, Ytterbium (Eastercon 2019) |
| 22 Apr 2019 | <i>Untangling DNA</i> , talk at Ytterbium (Eastercon 2019) |
| 20 May 2019 | <i>Untangling DNA</i> , talk at Pint of Science 2019, Coventry |
| 17 Aug 2019 | <i>Hyperbolic Crochet</i> , co-presentation at <i>Dublin 2019 - An Irish Worldcon</i> |
| | <i>The Mathematics of Music</i> , panel discussion at <i>Dublin 2019 - An Irish Worldcon</i> |
| | <i>Tall Technical Tales</i> , panel discussion at <i>Dublin 2019 - An Irish Worldcon</i> |
| 14 Sep 2019 | <i>Interactive Maths</i> , activity at University of Warwick Family Day/British Science Festival |

6 Dec 2019 *Émilie du Châtelet*, item on *Wrong But Useful* podcast
Sep 2023 – Apr 2024 Head of Programme, *Levitation* (Eastercon 2024)
31 Mar 2024 *Maths and Politics*, talk at *Levitation* (Eastercon 2024)
1 Jun 2024 *Symmetry Breaking and Space Leopards*, talk at *Funcon 1*
