

Thomas Harris

*I am a mathematician interested in applying abstract tools to challenging problems in the real world.
My favourite number is 26.*

Email: tkmharris@gmail.com Born: September 15, 1988
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Education

- Ph.D Mathematics, University of Southampton, 2015.
Thesis: *Binary complexes and algebraic K-theory*.
Supervisor: Dr. Bernhard Köck.
- M.Math Mathematics, University of Southampton, 2011.
Result: First class honours (finished first in year).
Received the School of Mathematics prize for best results in the year in 2010 and 2011.
- Secondary education, Gillingham School, 2007.
A grades at A-level in Maths, Further Maths, Physics, Religious Studies, and General Studies.
10 GCSEs, 7 at A* grade and 3 at A grade.

Research Experience

As a mathematics researcher I specialised in pure maths, focusing particularly on algebra and category theory. I can easily grasp abstract concepts and new theories, and have excellent logical and numerical skills. I have experience working on projects alone and in collaboration with others.

Positions and scholarships

- Research Associate, Department of Mathematical Sciences, Durham University, Oct – Dec 2015.
- Mathematical Research Fellowship, Mathematical Sciences, University of Southampton, 2014 – 2015.
Competitive award available following submission of a research statement and oral presentation.
- EPSRC funded postgraduate student, Mathematical Sciences, University of Southampton, 2011 – 2014.
- Recipient of a Nuffield undergraduate research bursary, Summer 2009,
worked on the project *Polynomial identities in Riemann–Roch theory*.

Publications

- *Algebraic proofs of some fundamental theorems in algebraic K-theory*,
Homology, Homotopy and Applications **17** (2015), no. 1, 267–280.
- *Exterior power operations via binary complexes*,
(with Bernhard Köck and Lenny Taelman), in preparation.

Other Skills and Experience

Computing

- Some exposure to the fundamentals of programming. I can write simple programs in Python and Haskell, and often use these to investigate mathematical problems. I have a high interest in developing these abilities further.

- I am familiar with the Linux operating system, and the version control system git.

Communication

- **Technical writing.** I am skilled at writing technical accounts of complex research in a clear, yet precise manner; my thesis committee made special mention of the clarity of my writing. I have an excellent command of the mathematical typesetting language \LaTeX .
- **Public speaking.** I have given talks of up to an hour on my work at local, national, and international research conferences. These include:
 - Young researchers in mathematics, Oxford 2015, Warwick 2014, Edinburgh 2013.
 - International conference on K -theory and related topics, Beijing, August 2014.
 - 11. Weihnachtsworkshop on geometry and number theory, Karlsruhe, December 2013.
 - Pure mathematics colloquium, Southampton, October 2013.
- I can read mathematical German at an intermediate level. I have a beginner's knowledge of spoken German.

Teaching

- I ran tutorials for various undergraduate modules at Southampton during 2011 – 2015. Topics I taught include: Calculus, Linear Algebra, Number Theory and Cryptography, Metric Spaces and Topology, and Foundations of Computer Science.
- In 2014 – 2015 I taught Galois Theory to advanced students at Winchester College.
- I have also privately tutored several students in A-level maths.

Organisation

- To broaden the horizons of maths students at Southampton, I set up the [Southampton Undergraduate Maths Seminar](#). I was the main organiser from 2013 – 2015 and contributed several talks.
- I was the organiser of the Southampton postgraduate pure maths seminar in 2012 – 2013.

Miscellaneous Activities

- I have been an associate member of the London Mathematical Society since March 2014.
- I wrote book reviews of *The Great Mathematical Problems* by Ian Stewart, and *How Not To Be Wrong* by Jordan Ellenberg for the *Newsletter of the London Mathematical Society*.
- Outside of maths, my interests include running, hillwalking, wild swimming, and books.

References

- Dr. Bernhard Köck, b.koeck@soton.ac.uk
Reader in Mathematics, University of Southampton. (PhD supervisor)
- Ms. Vesna Perisic, v.perisic@soton.ac.uk
Senior Teaching Fellow in Mathematics, University of Southampton.