Soma Purkait · Curriculum Vitae

Mathematics Institute
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Date of birth: 24 August 1985
Nationality: Indian

Academic

· **Research Fellow**, University of Warwick, July 2012–May 2014.
· **Ph.D. in Mathematics**, University of Warwick, July 2012, under Prof. Samir Siksek.
· **Junior Research Fellow**, Indian Statistical Institute, Bangalore, 2007–2008.
· **1st Class Master of Mathematics**, Indian Statistical Institute, Bangalore, 2005–2007.
· **B. Sc. Mathematics**, St. Stephen's College, University of Delhi, Graduated with Distinction (89.2 %), 2002–2005.

Research Interests

Number theory, arithmetic geometry, modular forms (particularly of half-integral weight), automorphic representations.

Publications

· (Joint with N. Kumar) *A note on the Fourier coefficients of half-integral weight modular forms*, to appear in Arch. Math. (Basel).
· *Hecke operators in half-integral weight*, to appear in J. Théor. Nombres Bordeaux.
· *Explicit applications of Waldspurger's Theorem*, LMS J. Comp. Math. , **16** (2013), 216–245.
· *On Shimura's decomposition*, Int. J. Number Theory **9** (2013), no. 06, 1431–1445 .
· *Eigenforms of Half-Integral Weight*, PhD thesis, University of Warwick, July 2012.
· (Joint with B. Sury) *Some vanishing sums involving binomial coefficients in the denominator*, Albanian J. Math. **2** (2008), no. 1, 27–32.

Recent Visits

· February 25–March 02, 2013: University of Luxembourg.
· January 01–March 31, 2013: Max Planck Institute for Mathematics, Bonn.
· December 08–22, 2012: Technion - Israel Institute of Technology.

Teaching

· **Lecturer**, Topics in Number Theory, Fall 2013.
· **Teaching Assistant**, Topics in Number Theory, Fall 2011.
· **Teaching Assistant**, Analysis II, Spring 2011.
· **Supervisor** of undergraduate first and second year Mathematics students, 2008–2012.
· **Mathematics Helpline Assistant** for students in class X and XII, St. Stephen's College, January–March 2005.
· **Private tuitions** for middle school students in India, 2000–2002.

Seminar and Conference Talks

· June 14, 2013: **Invited speaker** at *WaNDS Number Theory Seminar*, University of Nottingham.

· March 07, 2013: **Invited speaker** at *Oberseminar*, MPIM Bonn.
· February 28, 2013: **Invited speaker** at *Algebra and Number Theory Seminar*, University of Luxembourg.
· January 22, 2013: **Invited speaker** at *Number Theory Seminar*, University of Cologne.
· December 12, 2012: **Invited speaker** at *Number Theory Seminar*, Tel Aviv University.
· November 15, 2012: **Invited speaker** at *Number Theory Seminar*, University of Oxford.
· September 12, 2012: **Invited speaker** at *Number Theory Seminar*, Kyushu University.
· August 09, 2012: Contributed talk in *Building Bridges: 1st EU-US conference on Automorphic Forms and related topics* in RWTH, Aachen.
· June 18, 2012: Contributed talk in *CNTA XII* in Lethbridge.
· April 02, 2012: **Invited Speaker**, *ISI Colloquium*, Indian Statistical Institute, Bangalore.
· February 22, 2012: **Invited Speaker**, *Bristol Heilbronn Seminar*, "On Shimura Decomposition and Tunnel-like Formulae".
· November 18, 2011: London Mathematical Society Graduate Student Meeting 2011.
· July 13, 2011: **Invited Speaker**, *Foundations of Computational Mathematics 2011*, Budapest, "Eigenforms of half-integral weight and some applications".
· April 18, 2011: *British Mathematical Colloquium 2011*, Leicester.
· April 15, 2011: *Young Researchers in Mathematics 2011*, Warwick.
· January 26, 2011: *Warwick Postgraduate Open day*, "Congruent Number Problem and Shimura Correspondence".
· January 13, 2011: *MAGIC Postgraduate Student Conference*, University of Reading.
· November 15, 2010: *Warwick Number Theory Seminar*, "Eigenforms of half-integral weight".
· March 17, 2010: *Warwick Study Group on Complex Multiplication*, "The Hilbert Class Field".
· January 10, 2009: *Warwick Number Theory Seminar*, "Some vanishing sums involving binomial coefficients in the denominator".

Awards and Scholarships

· **Best Talk Award**, awarded by London Mathematical Society during Graduate Student Meeting 2011.
· **Warwick Impact Award**, University of Warwick, covers stipend for 2011–2012.
· **Warwick Postgraduate Research Scholarship**, awarded by University of Warwick, covers stipend and fees for 2008–2011.
· **Junior Research Fellowship**, awarded by Indian Statistical Institute, covers stipend for 2007–2008.
· **Certificate of Junior Research Fellowship in Mathematical Sciences**, awarded by the Council of Scientific and Industrial Research Fellowship Scheme of the Government of India, 2007.
· **M. Sc. Scholarship** awarded by the National Board for Higher Mathematics, Government of India, covers stipend for 2005–2007.
· **Dr. Ram Behari Award** for being the best student in B. Sc. (Honours) Mathematics at St. Stephen's College, 2005.
· **Dr. B. R. Katyal Scholarship**, St. Stephen's College, 2005.
· **Merit Scholarship** under the National Scholarship Scheme of the Government of India for excelling in the 10th standard public examination in the year 2000.

Recent academic activities and workshops participated

· October 14–18 2013: Women in Numbers workshop, CIRM Luminy.
· September 16–20 2013: Minicourses on Algebraic and Explicit Methods in Arithmetic, Laboratoire de Mathematiques de Besancon.
· July 01–05 2013: Number Theory, Geometry and Cryptography, University of Warwick.

- May 27–31 2013: Rational Points: Geometric, Analytic and Explicit Approaches, University of Warwick.
- April 29–May 03 2013: Higher rank automorphic forms and L-functions, University of Warwick.
- March 20–22, 2012: Explicit Methods for Modular Forms, University of Warwick.
- March 17–19, 2012: Automorphic Forms and L-Functions, University of Darmstadt.
- October 01–03, 2012: Arithmetic of L-functions, University of Bristol.
- September 24–28, 2012: Selmer Groups, Descent and the Distribution of Ranks, University of Warwick.
- August 06–10, 2012: Building Bridges: 1st EU-US conference on Automorphic Forms and related topics in RWTH, Aachen.
- June 17–22, 2012: CNTA XII in Lethbridge.
- June 10–17, 2012: BIRS summer school on Contemporary methods for solving Diophantine equations, Banff.
- August 29–September 08, 2011: Summer School and Conference on Computations with Modular Forms 2011, University of Heidelberg.
- July 12–14, 2011: Foundation of Computational Mathematics 2011, Budapest.
- May 04–06, 2011: Conference on the Birch and Swinnerton-Dyer conjecture, University of Cambridge.
- April 18–21, 2011: British Mathematical Colloquium 2011, University of Leicester.

Languages

- **Native**: Bengali, English, Hindi
- **Intermediate**: Japanese
- **Beginner**: German

Other Skills and Activities

- **Postgraduate Certificate in Transferable Skills**, University of Warwick, October 2011.
- Working knowledge of `MAGMA`, `C++` and `FORTRAN`.
- **Hostel President** at the Indian Statistical Institute in the year 2007. It is an elective office. The post involves managing an annual budget, organizing various sports tournaments and cultural programme as a part of the social activities at the institute and meetings to solve problems faced by students in the hostel.
- **Hostel Secretary** at the Indian Statistical Institute in the year 2006. It is an elective office.

Referees

Professor Samir Siksek
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