

# Curriculum Vitae

## Dr. Saurabh Kumar Singh

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### Education Qualification

Year		Examination Board/University
2015	Ph.D. (Mathematics)	TIFR Mumbai
2010	M.Sc. (Mathematics)	Indian Institute of Technology Kanpur
2008	B.Sc. (Math. Physics, Chemistry)	Banaras Hindu University

### Ph. D. Thesis

- PhD in Mathematics, School of Mathematics, Tata Institute of Fundamental Research (TIFR) Mumbai, India, September 2015
  - Title of the Thesis: Some problems in Number Theory
  - Thesis Supervisor: Prof. A. sankaranarayanan

### Research Area

- Number Theory: Analytic Number Theory, Circle method,  $L$ -functions, Sub-convexity bounds, Riemann-Zeta function, Sieve methods.

### Research Experience

- Associate professor at **Indian Institute of Technology, Kanpur** from January 2023 till present.
- Assistant professor at **Indian Institute of Technology, Kanpur** from November 2019- December 2022.
- Visiting Scientist at **Max Planck Institute of Mathematics, Bonn, Germany** from May - July 2025.
- DST Inspire fellow at **Indian Statistical Institute, Kolkata** from August 2018- October 2019.

- Post-doctoral fellow at **Indian Statistical Institute, Kolkata** from January 2018 - July 2018.
- Visiting Scientist at **University of Ulm, Germany** from July 2017 to December 2017.
- Post-doctoral visiting fellow at **Indian Statistical Institute, Kolkata** from November 2015 - June 2017.
- Visiting Scientist at **Harish-Chandra Research Institute(HRI), Allahabad** during June - July 2015.

### PhD supervision

- Mohammad Harun (Roll No: 18208264) 01st January 2019- December 2023.
- Himanshi Chanana (Roll No: 20108268) 1st September 2020- till date (Thesis submission: June-2025).
- Prakhar Chaubey (Roll No: 232080605) 02nd January 2024- till date.

### Work Experience

- Educational consultant for the Online Rural Education Initiative, Rozi Shikha Kendra, IIT Kanpur.
- Organized a workshop and conference (with Ritabrata Munshi and K. Mallesham) titled “Circle Method and Related Topics” during 28 October to 08 November 2024 at ICTS Bangalore.
- Organized a conference (with Ritabrata Munshi and Soumya Das) titled “ $L$ -functions, circle method and applications” during 27th June to 1st July 2022 (hybrid) at ICTS Bangalore.
- Organized workshop (with Sumit Kumar, Prahlad Sharma and K. Mallesham) named “ Number theory in India” from 05th April to 09th April, 2021 (Online).
- Organised seminar series (with Satadal Ganguly and Stephan Baier) named “ Number theory during lockdown” from 10th April to 31st July, 2020(Online).

### Teaching Experience

- Taught the course MTH215-An introduction to Number Theory (twice), MTH668-Analytic Number Theory (thrice), MTH201- Linear algebra, MSO202-Complex Analysis (twice) at **Indian Institute of Technology, Kanpur**.
- Worked as tutor for the course MTH-102 (linear algebra and differential equations) at **Indian Institute of Technology, Kanpur** during January-May 2020.
- Worked as Teaching Assistant of analysis course for Summer Program In Mathematics (SPIM) and Annual Foundation School(AFS)- III at **Harish-Chandra Research Institute(HRI), Allahabad** during June- July 2015.

- Worked as Teaching Assistant at **Tata Institute of Fundamental Research(TIFR)**, Mumbai during January 2011- April-2011, January 2012- April-2012 and January 2013- April-2013.

## Preprints and Publications

- Prahlad Sharma and Saurabh Kumar Singh: *Depth aspect subconvexity bound for  $GL(2) \times GL(2)$   $L$ -function*, **preprint**.
- Himanshi Chanana and Saurabh Kumar Singh: *Sum of the  $GL(2)$  Fourier coefficients over quadratics with arithmetic weight*, **submitted**.
- Himanshi Chanana and Saurabh Kumar Singh: *Sum of the Fourier coefficients of  $SL(3, Z)$  Hecke Maass forms over quadratic polynomials*, **submitted**.
- Mohd Harun and Saurabh Kumar Singh: *Double weighted sum involving  $GL(3)$  Fourier coefficient*, **submitted**
- Himanshi Chanana and Saurabh Kumar Singh: *Sum of the  $GL(3)$  Fourier coefficients over mixed powers*, Int. J. Number Theory **21** (2025), 531-577.
- K. Mallesham, Sumit Kumar, Prahlad Sharma and Saurabh Kumar Singh: *Moments of derivatives of Modular  $L$ -functions*, Q. J. Math. **75** (2024), 715–734
- K. Mallesham, Sumit Kumar and Saurabh Kumar Singh: *Spectral aspect subconvexity bound for  $GL(3) \times GL(2)$   $L$ -function*, **accepted** for publication in Forum Mathematicum.
- Mohd Harun, Sumit Kumar and Saurabh Kumar Singh: *Hybrid subconvexity bound for  $GL(3) \times GL(2)$   $L$ -functions:  $t$  and level aspect*, Mathematika **70** (2024), no. 4, Paper No. e12272, 36 pp.
- Mohd Harun and Saurabh Kumar Singh: *Shifted convolution sum for  $GL(3) \times GL(3)$  with weighted average*, J. Number Theory **261** (2024), 55–94.
- Mohd Harun and Saurabh Kumar Singh: *Shifted convolution sum for  $GL(3) \times GL(2)$  with weighted average*, Ramanujan J. **64** (2024), no. 1, 93–122.
- Sumit Kumar, Ritabrata Munshi and Saurabh Kumar Singh: *Sub-convexity bound for  $GL(3) \times GL(2)$   $L$ -functions: Hybrid level aspect*, Algebra Number Theory **18** (2024), no. 3, 477–497.
- Aritra Ghosh, K. Mallesham, Sumit Kumar and Saurabh Kumar Singh: *Bounds for Del Pezzo surfaces of degree two*, Q. J. Math. **74** (2023), no. 1, 247–271.
- Himanshi Chanana and Saurabh Kumar Singh: *Sum of the Fourier coefficients of  $SL(3, Z)$  Hecke Maass forms over quadratics*, J. Number Theory **248** (2023), 242–260.
- K. Mallesham, Sumit Kumar and Saurabh Kumar Singh: *Non-linear additive twist of  $GL(3) \times GL(2)$  and  $GL(3)$  forms*, Monatsh. Math. **199** (2022), no. 2, 315–361.
- K. Mallesham, Sumit Kumar and Saurabh Kumar Singh: *Sub-convexity bound for  $GL(3) \times GL(2)$   $L$ -function: the depth aspect*, Math. Z. **301** (2022), no. 3, 2229–2268.
- Ratnadeep Acharya, **Prahlad Sharma** and Saurabh Kumar Singh:  *$t$ -aspect subconvexity for  $GL(2) \times GL(2)$   $L$ -function*, J. Number Theory **240** (2022), 296–324.
- Keshav Aggarwal and Saurabh Kumar Singh: *Sub-convexity bound for  $GL(2)$   $L$ -functions,  $t$ -aspect*, Mathematika **67** (2021), no. 1, 71–99.

- R. Acharya and Saurabh Kumar Singh: *An exponential sum involving Fourier coefficients of  $SL(2, \mathbb{Z})$  eigenforms*, Ramanujan J. **54** (2021), no. 3, 699–716.
- R. Acharya, Sumit Kumar, Gopal Maity and Saurabh Kumar Singh: *Subconvexity bound for  $GL(2)$   $L$ -functions:  $t$ -aspect*, Acta Arith. **194** (2020), no. 2, 111–133.
- H. Maier and Saurabh Kumar Singh: *On the set of divisors of Gaussian integers*, Ramanujan J. **50** (2019), no. 2, 355–366.
- Ritabrata Munshi and Saurabh Kumar Singh: *Weyl bound for  $p$ -power twist of  $GL(2)$   $L$ -functions*, Algebra Number Theory **13** (2019), no. 6, 1395–1413.
- A. Sankaranarayanan, Saurabh Kumar Singh and K. Srinivas : *Discrete mean square estimates for coefficients of symmetric power  $L$ -functions*, Acta Arith. **190** (2019), no. 2, 193–208.
- H. Maier and Saurabh Kumar Singh: *On multiplicative functions with mean-value close to  $-1$  on primes*, J. Number Theory **197** (2019), 89–105.
- Saurabh Kumar Singh: *On double shifted convolution sum of  $SL(2, \mathbb{Z})$  Hecke eigenforms*, J. Number Theory **191** (2018), 258–272.
- Saurabh Kumar Singh: *On the Riesz means of  $\delta_k(n)$* , Hardy-Ramanujan Journal **40** (2017), 24–30.
- A. Sankaranarayanan, Saurabh Kumar Singh: *On the Riesz means of  $\frac{n}{\phi(n)} - III$* , Acta. Arith. **170** (2015) no.3, 275–286.
- A. Sankaranarayanan, Saurabh Kumar Singh: *On the Riesz means of  $\frac{n}{\phi(n)} - II$* , Arch. math. (Basel) **103** (2014), no. 4, 329–343.
- A. Sankaranarayanan, Saurabh Kumar Singh: *On the Riesz means of  $\frac{n}{\phi(n)}$* , Hardy-Ramanujan J. **36** (2013), 8–20.
- A. Sankaranarayanan, N. Saradha, Saurabh Kumar Singh: *Normality of some decimals generated by primes in a residue class*, J. Number Theory **133** (2013), no. 4, 1229–1250.

### Paper presentations/Talk given

- Delivered a talk on “*Hybrid sub-convexity bound for  $GL(3) \times GL(2)$   $L$ -functions*” in “Conference on Analytic Number Theory ” at **Indian Statistical Institute, Kolkata** during July 04 – 05, 2022.
- Delivered a talk on “*Spectral aspect subconvexity bound for  $GL(3) \times GL(2)$   $L$ -functions*” in “Delta symbols and the subconvexity problem” at **American Institute of Mathematics, San Jose, California** during November 02 – 06, 2020.
- Delivered a talk on “*twist aspect subconvexity bound for  $GL(2)$   $L$ -functions*” in “Number Theory seminar” at **Indian Statistical Institute, Kolkata** on January 03, 2019.
- Delivered a contributed talk on “ *$t$ -aspect subconvexity bound for  $GL(2)$   $L$ -functions*” in “Symposium in Number Theory” at **IIT Gandhinagar** during December 22 – 23, 2019.
- Delivered a talk on “*Riemann zeta function and its properties*” at **Sikkim University** during March 07 – 08, 2019.

- Delivered a talk on “*Sub-convexity problems: Some history and recent developments*” in “Workshop on Number Theory” at **National Institute of Science Education and Research, Bhubaneswar** during November 30 to December 06, 2018.
- Delivered a talk on “*Subconvexity bounds for  $GL(2)$   $L$ -functions*” in “Colloquium” at **Tata Institute of Fundamental Research, Mumbai** on 23 August 2018.
- Delivered a talk on “*Subconvexity bounds for  $GL(2)$   $L$ -functions*” in “weekly seminar” at **Indian Institute of Technology Bombay** on 22 August 2018.
- Delivered a talk on “*Subconvexity bound for  $GL(2)$   $L$ -functions:  $t$ -aspect*” in “Discussion Meeting on Automorphic Forms” at **National Institute of Science Education and Research, Bhubaneswar** during December 21-27, 2016.
- Delivered a talk on “*On double shifted convolution sum of  $SL(2, \mathbb{Z})$  Hecke eigenforms*” in “International Conference of The Indian Mathematics Consortium(TIMC) in cooperation with American Mathematical Society(AMS)” at **Banaras Hindu University, Varanasi** during December 14 - 17, 2016.
- Delivered a talk on “*On the Riesz means of  $\frac{n}{\phi(n)} - III$* ” in “International Conference on Automorphic forms and application” at **Kerala School of Mathematics, Kozhikode** during February 13 - 14, 2015.
- Delivered a talk on “*On the Riesz means of  $\frac{n}{\phi(n)} - II$* ” in “International meeting on Number Theory” at **Tata Institute of Fundamental Research (TIFR), Mumbai** January 05-09, 2015.

### National/International Workshops Attended

- Attended workshop on “*Trace functions and their applications*” held at Monte Varità, Ascona, Switzerland during January 13-19, 2019.
- Attended workshop on “ *$L$ -functions: Open Problems and Current Methods*” held at Bonn, Germany during June 25-29, 2018.
- Attended preparatory course on “ *$L$ -functions and Automorphic forms*” held at Heidleberg, Germany during February 17-19, 2016.
- Participated in “*ATM Workshop in Analytic Number Theory*” held at IMSc, Chennai during October 19-24, 2015.
- Participated in workshop on “*Winter school on modular functions in one and several variables*” held at Goa University, Goa during December 08-16, 2014.
- Participated in workshop on “*Winter school on modular functions in one and several variables*” held at Goa University, Goa during December 08-16, 2014.
- Attended a ATM workshop on “*AIS Analytic Number Theory*” held at KIIT Bhubaneshwar during June 10-30, 2013.
- Attended an Advance Training in Mathematics (ATM) workshop on “*Hilbert Modular forms and varieties*” held at K.S.O.M., Kozhikode during January 21-31, 2013.
- Attended an ATM Workshop on “*Advanced Training in Mathematics Workshop, Almora Mathematical Surveys*” held at Kumaun University, Almora during October 03-07, 2012.

## National/International Conferences Attended

- Participated in “Symposium on Number Theory and its Applications In Honor of Olivier Ramaré’s 60th Birthday” at the Johann Radon Institute for Computational and Applied Mathematics, Linz, Austria during May 22 – 23 2025.
- Participated and given a talk in “Discussion meeting in Analytic Number Theory” held at Indian Statistical Institute Kolkata during January 08-12, 2024.
- Participated and given a talk in ‘Delta symbols and the subconvexity problem’ held at American Institute of Mathematics, San Jose, California during 02-06 November 2020 (online).
- Chaired a session in conference on “*Geometry of continued fractions: Ramanujam and his successors*” held at Central University of Himachal Pradesh during September 14-15, 2020.
- Participated and given a talk in “*Symposium in number theory*” held at Indian Institute of Technology Gandhinagar during December 22-23, 2019.
- Participated in Conference on “*Discussion Meeting on Automorphic Forms*” held at National Institute of Science Education and Research, Bhubaneswar during December 21-27, 2016.
- Participated in Conference on “*International Conference of The Indian Mathematics Consortium(TIMC) in cooperation with American Mathematical Society(AMS)*” held at Banaras Hindu University, Varanasi during December 14-17, 2016.
- Participated in Conference on “*L-functions and Automorphic forms*” held at Heidleberg, Germany during February 22-26, 2016.
- Participated in “*A conference celebrating 65th birthday of R. Balasubramanian*” held at IMSc., Chennai during December 14-18, 2015.
- Attended International Conference on “*International Meeting on Number Theory*” held at T.I.F.R., Mumbai during January 05-09, 2015.
- Participated in International Conference on “*Legacy of Srinivasa Ramanujan*” Delhi University, Delhi during December 17-22, 2012.
- Attended Lectures given by Prof. Peter Sarnak on “*The Ramanujan Conjecture and some diophantine equations*” at TIFR, Mumbai during May 18-24, 2012.
- Participated in International colloquium on “*Automorphic Representations and L-Functions*” held in TIFR, Mumbai during January 03-11, 2012
- Participated in Conference on “*Advances in Mathematical Sciences*” at Harish Chandra Research Institute,Allahabad during December 05-07, 2011.

## Awards and Fellowships:

- Received DST Inspire faculty award in July 2018.
- Awarded NBHM Post-doctoral fellowship in July 2016.

- All India Rank- 54 in GATE-2010 examination conducted by Indian Institutes of Technology.
- Awarded NBHM scholarship for M.Sc. students in second year of M.Sc.
- Awarded MCM scholarship for M.Sc. students at Indian Institute of Technology, Kanpur.
- All India Rank- 06 in JAM-2008 exams conducted by Indian Institutes of Technology.

## References

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