

Curriculum Vitae

Personal Details

Dr Kashif Ahmed

Associate Professor - Mathematics

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Academic Background

- 1 Senior Secondary, CBSE, Somerville School, Delhi, 2002.
 - 2 B.A. (H) Mathematics, Hansraj College, Delhi University, 2005.
 - 3 M.A. Mathematics, Hansraj College, Delhi University, 2007.
 - 4 CSIR - UGC NET in December 2008.
 - 5 M.Phil. in Mathematics, Delhi University, 2009.
 - 6 Ph.D. in Mathematics (Tropical Cryptography), Delhi University, 2023.
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Computer Literacy

Conversant with C++, Python, Maxima, Mathematica, R, SAGE, and LaTeX.

Teaching Experience

- Asst. Prof. (Guest), Dept. of Comp. Sci., Hansraj College, July 2008 - Apr 2011.
 - Asst. Prof. (Guest), Dept. of Maths, Daulat Ram College, July 2008 - Apr 2009.
 - Asst. Prof. (AdHoc), Dept. of Maths, Lady Shri Ram College, July 2009 - Aug 2009.
 - Asst. Prof. (AdHoc), Dept. of Maths, Hindu College, Aug 2009 - Dec 2010.
 - Asst. Prof. (AdHoc), Dept. of Maths, St. Stephen's College, Dec 2010 - March 2015.
 - Asst. Prof. (Permanent), Dept. of Maths, St. Stephen's College, Apr 2015 - Present.
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Publications

1. K. Ahmed, S. Pal, R. Mohan (2021). **A review of the tropical approach in cryptography** in *Cryptologia*, 1 - 25. Taylor & Francis.
DOI: [10.1080/01611194.2021.1994486](https://doi.org/10.1080/01611194.2021.1994486)
 2. K. Ahmed, S. Pal, R. Mohan (2022). **Some new semiring structures** in *Asian-European Journal of Mathematics*, World Scientific.
DOI: [10.1142/S179355712250173X](https://doi.org/10.1142/S179355712250173X)
 3. K. Ahmed, S. Pal, R. Mohan (2022). **Key exchange protocol based upon a modified tropical structure** in *Communications in Algebra*, 1- 10. Taylor & Francis. DOI: [10.1080/00927872.2022.2095566](https://doi.org/10.1080/00927872.2022.2095566)
 4. K. Ahmed, S. Pal, R. Mohan (2025). **Cryptanalysis of a Tropical Key Exchange Scheme** in *International Transactions in Mathematical Sciences and Computer*, 223-242. Association for Advancement in Combinatorial Sciences. DOI: [10.58517/ITMSC.2025.18209](https://doi.org/10.58517/ITMSC.2025.18209)
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Papers Presented at International Conferences

1. **Some New Semiring Structures** presented at the *International Conference on Algebra and Related Topics with Applications*. Aligarh Muslim University. December 17-19, 2019.
 2. **Tropical Algebraic Structures in Cryptography** presented at the *International Conference on Recent Trends in Mathematics*. Hansraj College, University of Delhi. December 22-24, 2021.
 3. **Cryptanalysis of a Tropical Key Exchange Scheme** presented at the *Second International Conference on Recent Trends in Mathematics*. Hansraj College, University of Delhi. February 07-08, 2025.
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List of Seminars/Workshops/Symposiums/Conferences attended

1. National Workshop on *Analysis*, Department of Mathematics, Delhi University, September 27 - 28, 2007.
2. International Conference on *Operator Theory and Related Areas*, Department of Mathematics, Delhi University, January 9 - 12, 2008.
3. *Pre-ICM International Convention on Mathematical Sciences*, Department of Mathematics, Delhi University, December 18 - 20, 2007.
4. National Meet on *History of Mathematical Sciences*, Department of Mathematics, Delhi University, January 7 - 9, 2010.
5. International Conference on *The Legacy of Srinivasa Ramanujan*, Department of Mathematics, Delhi University, December 17 - 22, 2012.
6. Workshop on *Foundation Course – Building Mathematical Ability*, CPDHE, Delhi University, June 12 - 14, 2013.
7. Workshop on *Foundation Course – Teaching Methodology for Maths for Visually Impaired*, CPDHE, Delhi University, March 12 - 13, 2014.
8. *Workshop on LaTeX*, Department of Mathematics, Hansraj College, Delhi University, April 9, 2016
9. National Workshop on *Group Theory and its Applications*, Department of Mathematics, St. Stephen's College, Delhi University, March 28 - 29, 2016.
10. National Conference on *Algebra, Analysis, Coding and Cryptography*, Department of Mathematics, Delhi University, October 14 - 15, 2016.
11. Faculty Development Programme on *Statistical Computing Software 'R'*, Department of Mathematics, Keshav Mahavidyalaya, Delhi University, March 24, 2017.
12. International Conference on *Mathematics and Applications*, Department of Mathematics, Ramjas College, Delhi University, April 26 - 28, 2017.
13. National Conference on *Scientific Innovation*, St. Stephen's College, Delhi University, April 5 - 6, 2018.
14. The 33rd Annual Conference of *The Ramanujan Mathematical Society*, Department of Mathematics, Delhi University, June 1 - 3, 2018.
15. Faculty Development Programme on *Software Packages for Mathematical Sciences*, Mahatma Hansraj Faculty Development Centre, MHRD, Govt. of India,

November 14 - 19, 2018.

16. *National Research Scholar's Seminar*, Department of Mathematics, University of Delhi, December 18, 2018.
 17. Faculty Development Programme on *Understanding the Connection of Mathematics with the World around us: An application based learning*, Mahatma Hansraj Faculty Development Centre, MHRD, Govt. of India, June 20 - 26, 2019.
 18. International Conference on *Algebra and Related Topics with Applications*, Aligarh Muslim University, December 17-19, 2019.
 19. Faculty Development Programme on *ICT Based New Paradigms of E-Teaching and E-Learning: Digital Pedagogy*, Department of Computer Science, Mata Sundri College for Women, University of Delhi, September 15 - 30, 2020.
 20. Faculty Development Programme on *Applications of Algebra and Number Theory in Network Security*, Mahatma Hansraj Faculty Development Centre, MHRD, Govt. of India, December 22 - 29, 2020.
 21. Refresher Course in *Mathematical Sciences*, Teaching Learning Centre, Ramanujan College, University of Delhi, June 14 - 28, 2021.
 22. International Conference on *Recent Trends in Mathematics*, Mahatma Hansraj Faculty Development Centre, MHRD, Govt. of India, December 22 - 24, 2021.
 23. Faculty Development Program on *Python: Essentials, Programming, Analytics*, Guru Angad Dev Teaching Learning Centre, Govt. of India, SGTB Khalsa College, October 27 – November 3, 2022.
 24. Faculty Development Program on *AI Tools for e-Content Development and Teaching-Learning*, UGC-Malaviya Mission Teacher Training Centre (UGC-MMTTC/GAD-MMTTC), SGTB Khalsa College, April 15 – 26, 2024.
 25. Second International Conference on *Recent Trends in Mathematics*, Mahatma Hansraj Faculty Development Centre, MHRD, Govt. of India, February 7–8, 2025.
 26. Faculty Development Program on *Cryptography and Information Security* under Malaviya Mission Teacher Training Programme (MM-TTP), University Grants Commission (UGC) organized by Mahatma Hansraj Malaviya Mission Teacher Training Centre (MH-MMTTC), Hansraj College, University of Delhi, July 10 – 16, 2025.
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Administrative Work/ Position of Responsibilities

- Co-handled the Timetable of the College from 2011 - 2020.
 - Designed the new College Attendance Register in 2012.
 - Co-handled Attendance and Internal Assessment of the College from 2012 - 2017
 - Staff Advisor of College Societies: The Quiz Club from 2012 - 2017, The Leadership Cell from 2017 – 2020.
 - Advisor of the Internet Resource Centre, St. Stephen's College, 2016-2017.
 - Member of the College Purchase Committee, April 2018 - March 2019.
 - Associate Director, St. Stephen's Center of Advanced Learning, October 2022 – May 2023.
 - Member of the College Governing Body, November 2022 – November 2023.
 - Member of the College Workload Committee, October 2023 – Present.
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Supervisor/Organiser

- Mentored seven Mathematics students of St. Stephen's College in *Finite Fields and their Applications* under The Nagpaul Fellowship, September 2016- February 2017.
- Organised a State-level Symposium on *Algebra and its Applications* at St. Stephen's College, Delhi University, March 22-23, 2018.
- Mentored four students of St. Stephen's College in *Cryptography* under The Nagpaul Fellowship, September 2018 – March 2019.
- Mentored two Mathematics students of St. Stephen's College in *Applications of Abstract Mathematical Structures* under The Nagpaul Fellowship, October 2020 - April 2021.
- Mentored three St. Stephen's College students in *The Algebra of QR – Codes* under The Nagpaul Fellowship, October 2022 – April 2023.
- Mentored five St. Stephen's College students in *Mathematics in Motion: Tech in a*

FASTag under the Nagpaul Fellowship, October 2023 – April 2024.

- Mentored two St. Stephen's College students in *The Mathematics of Identification Numbers, Check-Digit Schemes, and Binary Codes* under The Nagpaul Fellowship, October 2024 - April 2025.
- Supervised an undergraduate dissertation titled *Tropical Semirings and their Applications* for a fourth year Mathematics student at St. Stephen's College under UGCF 2022 framework.

Dr KASHIF AHMED