

# CURRICULUM-VITAE

## **Dr. Atul Gaur,**

Associate Professor, Department of Mathematics,  
Faculty of Mathematical Sciences,  
University of Delhi, Delhi-110007, India.

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## **Teaching, Industrial experience:**

1. From February 23, 2021 to till date: Associate Professor, Department of Mathematics, University of Delhi, Delhi.
2. From February 23, 2018 to February 22, 2021: Assistant Professor (Stage III), Department of Mathematics, University of Delhi, Delhi.
3. From February 23, 2013 to February 22, 2018: Assistant Professor (Stage II), Department of Mathematics, University of Delhi, Delhi.
4. From January 7, 2010 - February 22, 2013: Assistant Professor (Stage I), Department of Mathematics, University of Delhi, Delhi.
5. From November 15, 2008 to December 26, 2009: Assistant Professor, Department of Mathematics, The Laxmi Niwas Mittal Institute of Information Technology, Jaipur.
6. From December 17, 2007 to October 31, 2008: Lecturer, Department of Mathematics, BITS Pilani Goa Campus, Goa.
7. Five months industrial training at National Informatics Centre, New Delhi as a part of my Integrated M.Sc. programme from July 1999 to November 1999. There I worked on a project in Visual Basic 6.0 and SQL Server.

## **Academic Information:**

1. **B.Sc. (Mathematics, Physics, Chemistry), 70.9%**, S.V. College, Dr. B.R.A. University Agra, 1993-1996.
2. **Integrated M.Sc. In Mathematics and Computer Science, 79.0%**, Department of Mathematics, Dr. B.R.A. University Agra, 1996-1999. Got highest percentage in the University.
3. **Doctor of Philosophy: Commutative Algebra** (Under the supervision of Prof. Alok Kumar Maloo), Indian Institute of Technology Kanpur, Kanpur, 2008.

#### Area of Research Interest:

Commutative Algebra, Multiplication modules.

#### Research Paper's Published:

1. P.R. Mishra, Prachi Gupta, Atul Gaur, On full differential uniformity of permutations on the ring of integers modulo  $n$ , To appear in *Applicable Algebra in Engineering, Communications and Computing*, <https://doi.org/10.1007/s00200-021-00503-w>. (SCIE Publication)
2. Rahul Kumar & Atul Gaur, A note on  $\phi$ - $\lambda$ -rings and  $\phi$ - $\Delta$ -rings, To appear in *Rendiconti del Circolo Matematico di Palermo Series II*, <https://doi.org/10.1007/s12215-020-00580-9>. (SCIE Publication)
3. Rahul Kumar & Atul Gaur, A note on residually small rings and modules, To appear in *Palestine Journal of Mathematics*. (ESCI Publication)
4. D.E. Dobbs, Atul Gaur, Rahul Kumar, On a field-theoretic invariant for extensions of commutative rings, II, *Palestine Journal of Mathematics*, 10(2), 373-382, 2021. (ESCI Publication)
5. Rahul Kumar & Atul Gaur, Maximal non- $\phi$ -pseudo-valuation rings, To appear in *Journal of Algebra and Its Applications*. (SCIE Publication) DOI: 10.1142/S0219498822500906.

6. Rahul Kumar & Atul Gaur, Pointwise maximal subrings, To appear in *Contributions to Algebra and Geometry*, DOI: 10.1007/s13366-020-00537-0. (ESCI Publication)
7. Rahul Kumar & Atul Gaur, A note on imbedded prime divisors, *Contributions to Algebra and Geometry*, 62(3), 595-597, 2021. (ESCI Publication)
8. Arti Sharma & Atul Gaur, Energy of a Maximal Graph, *Palestine Journal of Mathematics*, 10(1), 69-77, 2021. (ESCI Publication)
9. H. Q. Dinh, Atul Gaur, Indivar Gupta, A. K. Singh, Manoj Kumar Singh, R. Tansuchat, Hamming distance of repeated root constacyclic codes of length  $2p^s$  over  $\mathcal{F}_{p^m} + u\mathcal{F}_{p^m}$ , *Applicable Algebra in Engineering, Communication and Computing*, 31(3-4), 291-305, 2020. (SCIE Publication)
10. H. Q. Dinh, Atul Gaur, A. K. Singh, Manoj Kumar Singh, W. Yamaka,  $b$ -Symbol distance of constacyclic codes of length  $p^s$  over  $\mathcal{F}_{p^m} + u\mathcal{F}_{p^m}$ , *IEEE Access*, 8, 67330-67341, 2020. (SCIE Publication)
11. Rahul Kumar & Atul Gaur, A note on  $\lambda$ -domains and  $\Delta$ -domains, *Bulletin of the Belgian Mathematical Society*, 27(4), 499-508, 2020. (SCIE Publication)
12. Rahul Kumar & Atul Gaur, Three open questions on residually small rings, *Rocky Mountain Journal of Mathematics*, 50(1), 177-180, 2020. (SCIE Publication)
13. Rahul Kumar & Atul Gaur, Avoidance principle and intersection property for a class of rings, *Czechoslovak Mathematical Journal*, 70(4), 1091-1096, 2020. (SCIE Publication)
14. Rahul Kumar & Atul Gaur, Maximal non valuation domains in an integral domain, 70(4), *Czechoslovak Mathematical Journal*, 1019-1032, 2020. (SCIE Publication)
15. Rahul Kumar & Atul Gaur, Maximal non  $\lambda$ -subrings, *Czechoslovak Mathematical Journal*, 70(2), 323-337, 2020. (SCIE Publication)
16. Rahul Kumar & Atul Gaur,  $\lambda$ -rings,  $\phi$ - $\lambda$ -rings, and  $\phi$ - $\Delta$ -rings, *Filomat*, 33(16), 5125-5134, 2019. (SCIE Publication)

17. Arti Sharma & Atul Gaur, Maximal Labeling of Graphs, *Discrete Mathematics, Algorithms and Applications*, 11(4), 1950044, 2019. (ESCI Publication)
18. Atul Gaur & Rahul Kumar, Maximal Non  $\phi$ -Chained Rings and Maximal Non Chained Rings, *Results in Mathematics*, 74(3), 2019. (SCIE Publication)
19. Arti Sharma & Atul Gaur, Non-reduced rings of small order and their maximal graph, *Journal of Algebra and Related Topics*, 6(1), 35-44, 2018.
20. Rahul Kumar & Atul Gaur,  $\Delta$ -extension of rings and invariance properties of ring extension under group action, *Journal of Algebra and its Applications*, 17(12), 1850239, 2018. (SCIE Publication)
21. Rahul Kumar & Atul Gaur, A Corrigendum to “Hereditary Properties Between a Ring and its Maximal Subrings”, *Ukrainian Mathematical Journal*, 70(4), 583-584, 2018. (SCIE Publication)
22. Arti Sharma & Atul Gaur, When the Maximal Graph is Planar, Outerplanar and Ring Graph, *Discrete Mathematics, Algorithms and Applications*, 10(3), 1850032, 2018. (ESCI Publication)
23. Rahul Kumar & Atul Gaur, On  $\lambda$ -extension of commutative rings, *Journal of Algebra and Its Applications*, 17(4), 1850063, 2018. (SCIE Publication)
24. Mukti Acharya, Pranjali, Atul Gaur, Amit Kumar, Line Signed Graph of a Signed Total Graph, *Electronic Notes in Discrete Mathematics*, 63, 389-397, 2017.
25. Atul Gaur & Arti Sharma, Eulerian Graphs and Automorphisms of a Maximal Graph, *Indian Journal of Pure and Applied Mathematics*, 48(2), 233-244, 2017. (SCIE Publication)
26. Arti Sharma & Atul Gaur, Hamiltonian property of a maximal graph and chromatic number of its line graph, *JP Journal of Algebra, Number Theory & Applications*, 38(6), 589-607, 2016. (ESCI Publication)

27. Pranjali, Atul Gaur, Mukti Acharya, C-Consistency in signed total graphs of commutative rings, *Discrete Mathematics, Algorithms and Applications*, 8(3), 2016. (ESCI Publication)
28. Arti Sharma & Atul Gaur, Line Graphs associated to the Maximal Graphs, *Journal of Algebra and Related Topics*, 3(1), 1-11, 2015.
29. Atul Gaur & Arti Sharma, Maximal Graph of a commutative ring, *International Journal of Algebra*. 7(12): 581-588, 2013.
30. Atul Gaur & Alok Kumar Maloo, The Theta ideal, Dense Submodule and the Forcing Linearity Number for a Multiplication Module, *Contributions to Algebra and Geometry*. 50(2): 589-602, 2009. (ESCI Publication)
31. Atul Gaur & Alok Kumar Maloo, Maximally Differentially Graded Ideals in Zero Characteristic, *Hiroshima Mathematical Journal*. 38(1): 31-35, 2008. (SCIE Publication)
32. Atul Gaur & Alok Kumar Maloo, Minimal Prime Submodules. *International Journal of Algebra*, 2(20): 953-956, 2008.
33. Atul Gaur, Alok Kumar Maloo, Anand Parkash, Prime Submodules in Multiplication Modules, *International Journal of Algebra*. 1(8): 375-380, 2007.

#### **Conferences/ Seminar/ Workshop Attended/ Organized:**

1. Attended ATM workshop in Commutative Algebra and Algebraic Geometry held at IIT Chennai during 10-23rd June, 2007.
2. Attended National Meet of Research Scholars in Mathematical Sciences (NMRSMS-2007, Sponsored by DST, Government of India, New Delhi) and presented my work on Prime Submodules in Multiplication Modules.
3. Delivered an invited talk on Multiplication modules in one day National Seminar in Algebra at K.B.N. College Vijayawada on 25th October, 2011.

4. Attended “The Legacy of Srinivasa Ramanujan” an international conference held at University of Delhi during 17 - 22 December, 2012.
5. Organized (With Prof. S.K. Mutto & Prof. C. K. Jaggi) refresher course for college teachers (sponsored by UGC) at CPDHE, University of Delhi, Delhi during 2nd January, 2013 to 22nd January, 2013.
6. Organized Advanced Training in Mathematics School (Instructional School for Teachers in Group Theory) supported by National Centre for Mathematics held at Department of Mathematics, University of Delhi, Delhi during 3-15 June, 2013.
7. Organized National seminar for research scholars during September 20-21, 2013 at Department of Mathematics, University of Delhi.
8. Organized (With Prof. S.K. Mutto & Prof. Kishor Agarwal) a 3-week Refresher Course in Mathematics, Computer Science, Operational Research, Statistics from December 14, 2013 to January 04, 2014 at CPDHE, University of Delhi, Delhi.
9. Presented my paper “On Beck’s Conjecture” in National Conference on Algebra, Analysis and Fuzzy Mathematics during February 21-22, 2014 organized by Department of Mathematics, School of Mathematical Sciences, North Maharashtra University, Jalgaon 425001, India.
10. Delivered an invited talk on March 15, 2014 at Department of Mathematics, Aligarh Muslim University, Aligarh.
11. Presented my paper “Graphical representations of commutative rings” in National Conference on Applications of Mathematics in Engineering and Sciences during November 29-30, 2014 organized by Department of Mathematics, Motilal Nehru National Institute of Technology Allahabad.
12. Presented my paper “Chromatic Number and Isomorphism of Maximal Graphs” in National Conference on ‘Emerging Trends in Mathematical Sciences (NCETMS-2015)’ during March 17-18, 2015 organized by Department of Mathematics, Choudhary Devilal University Sirsa, Haryana.

13. Attended UGC sponsored Orientation Programme during May 25-June 20, 2015 at CPDHE, University of Delhi, Delhi-110007.
14. Presented my paper “Diameter of Line Graph associated to a Maximal Graph of a Ring” in International Conference on Mathematics – 2015 held at Department of Mathematics, University of Kerala, Thiruvananthapuram (Trivandrum), Kerala during November 26-28, 2015.
15. Presented my paper “A Survey on Line Graphs of various Graphs associated to a ring” in National conference on Analysis, Differential Equations and Applications to be held at Department of Maths. and Stats, M L Sukhadia University, Udaipur, Rajasthan during February 25-27, 2016.
16. Delivered an invited talk on August 22, 2016 at Agarwal College, Wing II, Ballabgarh on Group and Rings.
17. Delivered an invited talk on August 22, 2016 at Agarwal College, Wing I, Ballabgarh on Field Theory.
18. Organized (With Dr. Lalit Kumar) National conference on Algebra, Analysis, Coding and Cryptography (Sponsored by DRDO) held at Department of Mathematics, University of Delhi, Delhi during 14-15 October, 2016.
19. Delivered an invited talk in Workshop on “Applications of Mathematics in Modern Era” during December 20-21, 2016 organized by Institute of Basic Sciences, Dr. B. R. Ambedkar University, Agra.
20. Presented my paper “Eulerian Property of Maximal Graph, Associated Line Graph and Comaximal Graph of a Ring” in International Conference on Recent Advances in Pure and Applied Mathematics & 28th Annual Conference of Rajasthan Ganita Parishad during February 13-14, 2017 organized by Department of Mathematics and Statistics, Mohanlal Sukhadia University, Udaipur, Rajasthan.
21. Attended Research Scholar Seminar & Annual Conference of the Society of Mathematical Sciences (Delhi) during May 01-02, 2017 organized by Department of Mathematics, University of Delhi, Delhi.

22. Attended UGC sponsored Refresher course in Mathematical Sciences during June 6-27, 2017 at CPDHE, University of Delhi, Delhi-110007.
23. Delivered an invited talk in International Conference on Recent Advances in Mathematics during February 17-18, 2018 held at Agarwal College, Ballabgarh.
24. Attended UGC sponsored Short Term Course on Research Methodology during December 18-24, 2018 at CPDHE, University of Delhi, Delhi-110007.
25. Deivered a talk on “Minimal ring extensions,  $\lambda$ -extensions, and  $\Delta$ -extensions of rings” in Conference on Mathematical Sciences and Development during December 22-24, 2018 organized by Institute of Basic Sciences, Dr. B. R. Ambedkar University, Agra.
26. Presented my work on “Ring extensions with certain conditions on intermediate rings” in Conference on Algebra, Analysis and Applications organized by Ambedkar University Delhi on May 10, 2019.
27. Attended UGC sponsored Short Term Course on MOOCs, E-Learning and ICT during June 15-21, 2019 at CPDHE, University of Delhi, Delhi-110007.
28. Delivered a contributory talk on “ $\lambda$ -subrings and maximal non  $\lambda$ -subrings” in International Conference on Algebras and its related Topics with Applications ” during December 17- 19, 2019 held at the Department of Mathematics, Aligarh Muslim University, Aligarh.
29. Delivered a talk on “Finite rings with  $n$  zero divisors” in National Conference on Application of Mathematical Tools in Social Sciences and Sciences at Zakir Hussain Delhi College, University of Delhi, Delhi during October 17-18, 2020.

### **Research Guidance:**



Ph.D. Students: Pranjali Sharma (Degree Awarded)  
Arti Sharma (Degree Awarded)  
Rahul Kumar (Thesis Submitted)  
Manoj Kumar Singh (in process)  
Prachi Gupta (in process)  
Yogesh Kumar (in process)  
Anant Singh (in process)

M.Phil. Students: Reema Agarwal (Degree Awarded)  
Meenal Sambhor (Degree Awarded)  
Jay Kishore Sahni (Degree Awarded)  
Karuna (Degree Awarded)  
Vibha Anand (Degree Awarded)  
Md. Sarik (Degree Awarded)  
Shivani Goel (Degree Awarded)  
Shikha Patel (Degree Awarded)  
Sonu Pal (Degree Awarded)

## Research Projects:

S. No.	Title of Research Project	Major/Minor (as per UGC Project guide-lines)	PI/Co-PI/Joint PI	Period	Total Grants Received (in rupees)& Name of the Funding Agency
2010-11	Generalization of radical formula for modules	Minor	PI	3 months	One lakh, University of Delhi
2011-12	To study the idealization of a module	Minor	PI	10 months	1.2 Lakh, University of Delhi
2012-13	Graph Theoretic properties of commutative rings	Minor	PI	10 months	90,000, University of Delhi
2013-14	Automorphism Group & Crossing Number of Maximal Graphs	Minor	PI	1 year	1.9 lakh, University of Delhi
2014-15	Line Graphs of Maximal Graphs	Minor	PI	1 year	1 lakh, University of Delhi
2015-16	Hamiltonian property of Maximal Graphs and Chromatic Number of its line graph	Minor	PI	1 year	1.3 lakh, University of Delhi
2018-19	On some ring extensions	Major	PI	3 years	6.6 lakh, DST-SERB under MATRICS scheme

### **Academic Achievements:**

1. Qualified CSIR-UGC NET June 2002 exam under CSIR fellowship scheme.
2. Qualified GATE 2002 (Mathematics) exam with percentile 80.30.
3. Selected for NBHM Post Doctoral Fellowship in October 2007.
4. Got highest marks (79%) in Integrated M.Sc. in Mathematics and Computer science, in my batch.

### **Fellowships:**

1. Junior Research Fellowship from CSIR during January 2003 to December 2004.
2. Senior Research Fellowship from CSIR during January 2005 to December 2007.

### **Personal Information:**

Name	Atul Gaur
Date of Birth	July 1, 1976
Nationality	Indian
Sex	Male
Marital Status	Married
Mailing Address	Flat No: 7-C, Himalaya Legend, Nyaya Khand-1, Indirapuram, Ghaziabad-201010, India.
Permanent Address	1/235, Surendra Nagar, Aligarh-202001, India

### **Other Activities:**

1. Served as Warden, Boys Hostel 2 during April, 2009 to December, 2009 at The LNMIIT Jaipur.

2. Took care of Married Students Welfare Committee as Accounts Secretary during 2005-06 at IIT Kanpur.
3. Took care of Married Students Welfare Committee as Block Representative and served the committee as Garden Secretary during 2006-07 at IIT Kanpur.