

## **Faculty Profile**

**Name:** Dr. Rakesh Kumar

**Designation:** Assistant Professor

**School:** School of Mathematics



**Email ID:** [rakesh.kumar@smvdu.ac.in](mailto:rakesh.kumar@smvdu.ac.in), rakesh\_stat\_kuk@yahoo.co.in

**Contact Number and Extn.:** 01991-285524, Ext. 2521(O), 6521(H)

**Mobile:** 9419932462, 7889906483(WhatsApp)

**Qualifications:** B. Sc., B. Ed., M. Sc. (Statistics), Ph.D. (Statistics)

**Experience:**

**Teaching: 14 Years**

**Research: 14 Years**

**Administration: 14 Years**

**Total: 14 Years**

**Areas of Interest / Specialization:**

**Queuing Theory and its applications**

**Brief Bio-data:**

Dr. Rakesh Kumar has received his Ph. D. in the area of Queuing Theory from the Department of Statistics and Operational Research, Kurukshetra University, Kurukshetra in the year 2006. He has been awarded University Medal by Kurukshetra University for standing first-class-first in M.Sc. Statistics. He has introduced the concepts like of ‘retention of renegeing customers’, ‘reverse balking’ and ‘ correlated renegeing’ in Queuing Theory. He has published extensively in the reputed journals like Bulletin of the Malaysian Mathematical Sciences Society, Communications in Statistics-Theory and Methods, Journal of Industrial and Production Engineering, Opsearch, Yugoslav Journal of Operations Research, International Journal of Operational Research and many more. He is the reviewer of Mathematical Reviews. He is on the Editorial Board of journals American Journal of Operational Research, Control and Systems Engineering, Information and Computer Security, and Modern Management Forum. He has guided three Ph.D. theses, and currently guiding one more scholar. He is the referee of many journals published by Springer, and Elsevier publishers. He has completed an UGC sponsored Major Research Project (2015-18) in the area of queuing theory. He has delivered many Invited talks in national/international conferences in India as well as in abroad. He is life member of Operational Research Society of India, International Indian Statistical Association, Indian Society for Industrial and Applied

Mathematics, Indian Society of Probability and Statistics, and Indian Statistical Institute and IEEE  
He has been the Organizing Secretary of two national conferences in SMVDU, Katra.

## University Education

<b>Examination</b>	<b>University</b>	<b>Year</b>
<b>B.Sc. (<u>Physics, Mathematics, Chemistry</u>)</b>	Himachal Pradesh University, Shimla, India	1998
<b>B. Ed. (<u>Teaching of Physical Sciences, and Mathematics</u>)</b>	University of Kashmir, Srinagar, Jammu & Kashmir, India	2000
<b>M.Sc. (<u>Statistics</u>)</b>	Kurukshetra University, Kurukshetra, India	2002
<b>One Year Certificate Course (<u>French Language</u>)</b>	Kurukshetra University, Kurukshetra, India	2004
<b>Ph.D. (<u>Statistics</u>)</b>	Kurukshetra University, Kurukshetra, India  <b>Thesis Title:</b> An analysis of some non-Markovian queues with special effects of catastrophe and restoration  <b>Thesis Supervisor:</b> Professor (Dr.) N. K. Jain	2006
<b>MOOC Certificate Course (<u>Analytics for Decision Making</u>)</b>	Babson College ,USA	2017
<b>MOOC Certificate Course (<u>Introduction to Operations Research</u>)</b>	Indian Institute of Technology, Madras, India	2018

## Employment History

<b>Institution</b>	<b>Designation</b>	<b>From</b>	<b>To</b>
Amity Business School, Amity University, Uttar Pradesh, India	Lecturer (Business Statistics and Operations Research)	2006	2007
Hindustan Institute of Management, Sharda Group of Institutions (Now SBS, Sharda University, India)	Senior Lecturer (Business Statistics and Operations Research)	2007	2009
School of Mathematics, Shri Mata Vaishno Devi University, Katra, India	Assistant Professor (Statistics & Operations Research)	2009	2013
School of Mathematics, Shri Mata Vaishno Devi University, Katra, India	Senior Assistant Professor (Statistics & Operations Research)	2013	Till date

## Administrative Experience

1. Member Secretary, School Research Committee, School of Mathematics, Shri Mata Vaishno Devi University
2. Member, Board of Studies, School of Mathematics, Shri Mata Vaishno Devi University
3. In-charge, Library Committee, School of Mathematics, Shri Mata Vaishno Devi University
4. Member Secretary, Standing Purchase Committee, Dean Students Welfare (January, 2019 onwards)
5. Joint Warden, Nilgiri Hostel, Shri Mata Vaishno Devi University (June 2017-till date)
6. Joint Warden, Vindhyachal Hostel, Shri Mata Vaishno Devi University (June 2016-May, 2017)
7. Member, Academic Affairs Committee, School of Mathematics, Shri Mata Vaishno Devi University
8. Member, Library Committee, DQA, Shri Mata Vaishno Devi University

9. Member, Admission Committee, School of Mathematics, Shri Mata Vaishno Devi University
10. School Coordinator, Alumni Affairs Committee, Shri Mata Vaishno Devi University
11. Course coordinator: Queuing Theory, Optimization Techniques,
12. Centre Controller at Delhi for SEE-UPTU: 2009
13. Management Representative for ISO 9001& 14001 activities of ABS, Amity University, Uttar Pradesh.

## Honours

1. **Awarded Certificate of Official Distinction of 26<sup>th</sup> International Science Conference on Computer Networks** for the research paper, “Transient Solution of a Heterogeneous Queuing System with Balking and Retention of Reneging Customers” in the 26<sup>th</sup> International Science Conference on Computer Networks (CN 2019) at Poland during June 25-27, 2019.
2. **Received Faculty Performance Linked Award @10% of the basic pay per month** for the performance in the academic year (July1, 2017 to June 30, 2018) w. e. f. July1, 2018 for a period of one year from Shri Mata Vaishno Devi University, Katra.
3. **Summer Faculty Research Fellowship** by Indian Institute of Technology, Delhi, India for research in queuing theory during June-July, 2012.
4. **University Medal** for standing First-Class-First in M.Sc. Statistics, Kurukshetra, University, Kurukshetra, India in 2003.
5. **University Research Scholarship** for doing Ph.D. in Statistics and Operations Research from Kurukshetra, University, Kurukshetra, India on 18<sup>th</sup> February, 2003.

## Editorial Board Member/ Reviewer of Journals:

1. **Reviewer** Mathematical Reviews (American Mathematical Society, USA)
2. **Editorial Board Member** of American Journal of Operational Research ((USA) <http://www.sapub.org/journal/editorialboard.aspx?journalid=1087>)
3. **Guest Editor** of a Special issue on “**Advances in Queuing theory and its applications**” American Journal of Operational Research, USA (2013).
4. **Guest Editor** of a Special issue on “**Queuing and Reliability Models with their Applications**” Reliability: Theory and Applications, USA (2019).

5. **Editorial Board Member** of Modern Management Forum (<http://ojs.usp-pl.com/index.php/Modern-Management-Forum/about/editorialTeam>)
6. **Editorial Board Member** of Control and Systems Engineering (<http://ojs.whioce.com/index.php/cse/about/editorialTeam>)
7. **Editorial Board Member** of Information and Computer Security

**Organizing Secretary/ Program Committee Members/ Session Chair/ Advisory Committee Member/ Session Organizer in National and International Conferences:**

1. **Program Committee Member**, 27<sup>th</sup> Conference on Computer Networks – CN 2020, Poland.
2. **Session chair** in the 11<sup>th</sup> International conference on Operations Research for Sustainable Development, February 1-2, 2020 at Janapriya Multiple Campus, Pokhara, Nepal.
3. **Advisory Committee Member**, International Conference on Contemporary Issues in Management, 2020, Lloyd Business School, Greater Noida, India.
4. **Program Committee Member**, 4<sup>th</sup> International Conference on Mathematical Techniques in Engineering Applications (ICMTEA-2020), Dehradun, India.
5. **Program Committee Member**, 1<sup>st</sup> International Workshop on Digital Content & Smart Multimedia, at Lviv Polytechnic National University, Lviv, Ukraine during December 23 - 25, 2019.
6. **Session chair** in a National Mathematics Research Scholar Meet at Department of Mathematics, **University of Jammu, India** during 20-22 August, 2019.
7. **Organizing Committee Member** of 4<sup>th</sup> National Conference on Recent Trends in Mathematical Sciences in association with International Academy of Physical Sciences during 13-14 December, 2019 at School of Mathematics, Shri Mata Vaishno Devi University, Katra, India.
8. **Program Committee Member**, 8<sup>th</sup> Annual International Conference on Computational Mathematics, Statistics and Operational Research (CMSOR 2019) at Singapore during 8-9 April, 2019.

9. **Steering Committee Member, Two weeks Refresher Course** on Introduction to MATLAB and Research Enhancement Tools at SECE in collaboration with HRDC, SMVDU, Katra (2018).
10. **Program Committee Member**, 84<sup>th</sup> Annual Conference of Indian Mathematical Society, Shri Mata Vaishno Devi University, India, 27-30 November, 2018.
11. **Organizer of a symposium on Queuing theory and its applications** in the 27<sup>th</sup> international conference of FIM on Interdisciplinary Mathematics, Statistics and Computational Techniques during 2-4 November, 2018 at University of Jammu.
12. **Session chair** in the 5<sup>th</sup> International conference on recent trends and advancements in engineering and technology at SMVDU, Katra during 25-26 October, 2018.
13. **Program Committee Member**, GSTF Conference on Operations Research and Statistics, Singapore, 2018.
14. **Technical chair** in the 4<sup>th</sup> International conference on recent trends and advancements in engineering and technology at SMVDU, Katra during 3-4 November, 2017.
15. **Organizing Committee Member** of National Conference on Algebra, Analysis and Applications during 7-8 March, 2017 at Department of Mathematics, SMVDU, Katra.
16. **Organizing Secretary** of the 3<sup>rd</sup> National Conference on Recent Trends in Mathematical Sciences (9-10 February, 2017) at Department of Mathematics, SMVDU, Katra.
17. **Resource Person**, National Seminar on Recent Advances in Differential Equations and their Applications during 3-4 February, 2017 at Department of Mathematics, Meenakshi College for Women, Chennai.
18. **Program Committee Member**, National Conference on Information Technology and Business Analytics, during 7-8 January, 2017 at Department of Computer Science and Engineering, SMVD University, Katra.
19. **Session Chair**, National Conference on Information Technology and Business Analytics, during 7-8 January, 2017 at Department of Computer Science and Engineering, SMVD University, Katra.
20. **Session Chair**, National Conference on Advances in Mathematical Sciences during 21-22 December, 2016 at Department of Mathematics, NSCBM Government Degree College, Hamirpur, H.P.

- 21. Session Chair**, National Seminar on Recent Advances in Mathematics and its Computational Aspects during 11-12 November, 2016 at Department of Mathematics, SMP Government Girls P.G. College, Meerut, U.P.
- 22. Organizing Secretary** of a National Conference on Recent Trends in Mathematical Sciences (October 8-9, 2015) at School of Mathematics, SMVDU, Katra.
- 23. Session Co-Chair** of an ICSSR sponsored international conference titled “Shifting Paradigms in Applied Economics and Management: Course Correction” held on 1<sup>st</sup> - 2<sup>nd</sup> August, 2014 at Faculty of management, SMVDU, Katra.
- 24. Organizing Committee Member** of a National Seminar on Recent Trends in Mathematical Sciences, 22<sup>nd</sup> March, 2013 at School of Mathematics, SMVDU, Katra.

### Sponsored Research Projects:

Major Research Project titled “**Transient solutions of Markovian Queuing Models with Customer Impatience and Retention of Reneged Customers**” sponsored by UGC, New Delhi, India with a Financial Outlay of Rs.989000 (July, 2015- June, 2018) **has been completed as a Principal Investigator** at School of Mathematics, Shri Mata Vaishno Devi University, Katra, J&K.

### Ph. D. Guidance

S/ No .	Name of the Student	Thesis Title	Year of Registration	Role	Department	University	Status of Ph. D. Work
1	Mr. Sumeet Kumar Sharma	Markovian Queuing Models for Retention of Impatient Customers	30 <sup>th</sup> December, 2010. (10PHD SOM03)	Main Supervisor	School of Mathematics	Shri Mata Vaishno Devi University, Katra.	Awarded on 27 <sup>th</sup> May, 2015.



2	Mr. Bhupender Kumar Som	Stochastic Models in Finance with Reverse balking and Reverse Reneging	20 <sup>th</sup> October, 2009. (2009-UD-Ph.D.-65)	Co-Supervisor (Main Supervisor, Dr. N. K. Jain)	Dept. of Statistics & Operational Research	Kurukshetra University, Kurukshetra.	Awarded on 27 <sup>th</sup> May, 2015.
3	Ms. Sapana Sharma	A Transient Study of Queues with Impatience and Retention	January, 2016	Main Supervisor	School of Mathematics	Shri Mata Vaishno Devi University, Katra.	Awarded on 28 <sup>th</sup> February, 2020.
4	Mr. Bhavneet Singh Soodan	Queuing Models with Correlated Reneging	January, 2017	Main Supervisor	School of Mathematics	Shri Mata Vaishno Devi University, Katra.	Near thesis submission

### **INTERNATIONAL RESEARCH GUIDANCE:**

Mr. M.I.G. Suranga Sampath research scholar at Huazhong University of Science and Technology, Wuhan, China visited School of Mathematics, SMVDU, Katra during April, 2018 . He consulted me for his Ph.D. work in the area of Queuing Theory.

**Master Thesis Guided (PG): 16**

### **NPTEL MENTORSHIP**

**Acted as a Mentor for NPTEL Course** on Introduction to Operations Research (July-December 2018).

### **Publications in Journals (SCIE/ESCI/SCOPUS Indexed)**

1. **Rakesh Kumar** and Bhavneet Singh Soodan, Transient Solution of a Single Server Queuing Model with Correlated Reneging using Runge-Kutta Method, **Accepted for publication in International Journal of Mathematical, Engineering and Management Sciences (2020). [Scopus Indexed]**
2. **Rakesh Kumar**, Sapana Sharma and S.I. Ammar, Transient and steady-state analysis of a queuing system having customers' impatience with threshold, **RAIRO Operations Research**, Vol. 53, No. 5 (Nov.-Dec. 2019), 1861-1876 (Online Published: 13 November, 2018) <https://doi.org/10.1051/ro/2018106>. **[SCIE & Scopus Indexed]**
3. **Rakesh Kumar**, Sapana Sharma and Vladimir Rykov, Transient Solution of a Heterogeneous Queuing System with Balking and Retention of Reneging Customers. **Communications in Computer and Information Science**, Vol. 1039, pp. 330-346. **[Scopus indexed]**
4. **Rakesh Kumar** and Sapana Sharma, Transient analysis of an M/M/c queuing system with retention of reneging customers [September, 2019], **International Journal of Operational Research**, Vol. 36, No.1 (2019), 78-91. **[Scopus Indexed]**
5. **Rakesh Kumar** and Sapana Sharma, Transient Solution of a Two-Heterogeneous Servers' Queuing System with Retention of Reneging Customers [Published online 28 February 2017], **Bulletin of the Malaysian Mathematical Sciences Society**, Vol.42, No.1 (January, 2019), 223–240. **[SCIE & Scopus Indexed]**
6. **Rakesh Kumar** and Sapana Sharma, Transient analysis of an M/M/c queuing system with balking and retention of reneging customers, [Published online: 21 Sep 2017] **Communications in Statistics - Theory and Methods**, Vol.48, No. 6, (2018), 1318-1327. **[SCIE & Scopus Indexed]**
7. Bhupender Kumar Som and **Rakesh Kumar**, A heterogeneous queuing system with reverse balking and reneging, [Published online: 09 Mar 2017] **Journal of Industrial and Production Engineering**, Vol.35, No. 1, (2018), 1-5. **[ESCI & Scopus Indexed]**
8. **Rakesh Kumar** and Sapana Sharma, Transient performance analysis of a single server queuing model with retention of reneging customers, **Yugoslav Journal of Operations Research**, Vol. 28, No. 3, (2018), 315-331. **[Scopus Indexed]**
9. **Rakesh Kumar**, A transient solution to the M/M/c queuing model equation with balking and catastrophes, **Croatian Operational Research Review**, Vol. 8, No.2 (December 31, 2017), 577-591. **[Scopus Indexed]**

10. **Rakesh Kumar** and Sapana Sharma, Transient Analysis of a Multi-server Queuing Model with Discouraged Arrivals and Retention of Reneging Customers, **Lecture Notes in Computer Science**, Vol. 10684 (2017), pp. 54-64., [Scopus indexed]
11. **Rakesh Kumar** and Sapana Sharma, Time-Dependent Analysis of a Single-Server Queuing Model with Discouraged Arrivals and Retention of Reneging Customers, **Reliability (Theory and Applications)** Vol. 12, No. 4 (2017) pp. 84-90. [Scopus Indexed]
12. S. Dharmaraja and **Rakesh Kumar**, Transient Solution of a Markovian Queuing Model with Heterogeneous Servers and Catastrophes, **Opsearch**, Vol. 52, No.4, (2015) 810-826. [ESCI & Scopus Indexed]
13. **Rakesh Kumar**, Bhupender Kumar Som and Sunidhi Jain, AN M/M/1/N Feedback Queuing System with Reverse Balking, **Journal of Reliability And Statistical Studies**, Vol. 8, No.1, (2015) 31-38. [ESCI Indexed]
14. **Rakesh Kumar** and Sumeet Kumar Sharma, A Markovian multi-server queuing model with retention of renegeed customers and balking, **International Journal of Operational Research**, Vol. 20, No. 4 (2014), 427–438. [Scopus Indexed]
15. **Rakesh Kumar** and Sumeet Kumar Sharma, A single-server Markovian Queuing system with discouraged arrivals and retention of renegeed customers, **Yugoslav Journal of Operations Research**, Vol. 24, No. 1 (2014), 119-126. [Scopus Indexed]
16. **Rakesh Kumar**, Narendra Kumar Jain and Bhupender Kumar Som, Optimization of M/M/1/N Feedback Queue with Retention of Renegeed Customers, **Operations Research and Decisions**, Vol 24, No.3, (2014) 45-58. [ESCI Indexed]
17. **Rakesh Kumar**, Economic analysis of an M/M/c/N queuing model with balking, renegeing and retention of renegeed customers, **Opsearch**, Vol. 50, No. 3 (2013), 383-403. [ESCI & Scopus Indexed]
18. **Rakesh Kumar** and Sumeet Kumar Sharma, An M/M/c/N queuing system with renegeing and retention of renegeed customers, **International Journal of Operational Research**, Vol. 17, No. 3 (2013), 333-344. [Scopus Indexed]
19. **Rakesh Kumar** and Sumeet Kumar Sharma, Economic analysis of M/M/c/N queue with retention of impatient customers, **International Journal of Mathematics in Operations Research**, Vol. 5, No. 6 (2013) 709-720. [Scopus Indexed]

20. **Rakesh Kumar**, Bhupinder Kumar Som, Sumeet Kumar Sharma and Sunidhi Jain, Profit Optimization in Insurance Business Facing Customer Impatience, **Global Journal of Pure and Applied Mathematics**, Vol. 9, No. 1(2013), 25-34. [**Scopus Indexed**]
21. **Rakesh Kumar**, A Catastrophic-cum-restorative queuing problem with correlated input and impatient customers, **International Journal of Agile Systems and Management**, Vol.5, No.1, (2012) 122-131. [**Scopus Indexed**]
22. **Rakesh Kumar**, A catastrophic-cum-restorative queuing system with correlated batch arrivals and general service time distribution, **Pakistan Journal of Statistics and Operation Research**, Vol. 8, No. 1, (2012) 43-53. [**ESCI & Scopus Indexed**]
23. **Rakesh Kumar** and Sumeet Kumar Sharma, Queuing with retention of reneged customers, **International Journal of Mathematical Models and Methods in Applied Sciences**, Vol. 6, No. 7, (2012) 819-828. [**Scopus Indexed**]
24. **Rakesh Kumar** and Sumeet Kumar Sharma, M/M/1/N queuing system with retention of reneged customers, **Pakistan Journal of Statistics and Operation Research**, Vol. 8, No. 4, (2012) 859-866. [**ESCI & Scopus Indexed**]
25. **Rakesh Kumar**, Transient solution of a catastrophic-cum-restorative M/M/2 queue with heterogeneous servers, **Pakistan Journal of Statistics**, Vol. 26, No.4 (2010) 609-613. [**Scopus Indexed**]
26. **Rakesh Kumar**, A catastrophic-cum-restorative queuing system with correlated batch arrivals and variable capacity, **Pakistan Journal of Statistics and Operation Research**, Vol. 4, No.2 (2008) 55-62. [**ESCI & Scopus Indexed**]
27. N. K. Jain and **Rakesh Kumar**, Transient solution of a catastrophic-cum-restorative queuing problem with correlated arrivals and variable service capacity, **International Journal of Information and Management Sciences**, Vol. 18, No. 4 (2007) 461-465. [**Scopus Indexed**]
28. N. K. Jain and **Rakesh Kumar**, Transient Solution of a Correlated Queueing Problem with Variable Capacity and Catastrophes, **International Journal of Information and Management Sciences**, Volume 16, Number 4 (2005) 39-47. [**Scopus Indexed**]

## **Research Publications in Other Referred Journals:**

29. Rakesh Kumar, Sapana Sharma, Bhavneet Singh Soodan, P. Vijaya Laxmi, and Bhupender Kumar Som, Transient Solution of a Heterogeneous Queuing System with Balking and Catastrophes, **Reliability (Theory and Applications)**, Vol.15, No. 1 (2020) pp. 42-50.
30. **Rakesh Kumar** and Bhavneet Singh Soodan Transient Numerical Analysis of a Queuing Model with Correlated Reneging, Balking and Feedback, **Reliability (Theory and Applications)** Vol. 14, No. 4 (2019) pp. 46-54.
31. **Rakesh Kumar** and Sumeet Kumar Sharma, Two-Heterogeneous Server Markovian Queuing Model with Discouraged Arrivals, Reneging and Retention of Reneged Customers, **International Journal of Operations Research**, Vol. 11, No. 2, (2014) 64-68. [**Math Sci Net, ZbMath Indexed**]
32. **Rakesh Kumar** and Sumeet Kumar Sharma, A multi-server Markovian queueing system with discouraged arrivals and retention of reneged customers, **International Journal of Operations Research**, Vol. 9, No. 4 (2012), 173-184. [**Math Sci Net, ZbMath Indexed**]
33. **Rakesh Kumar** and Sumeet Kumar Sharma, A Multi-Server Markovian Feedback Queue with Balking Reneging and Retention of Reneged Customers, **Advanced Modeling and Optimization**, Volume 16, No. 2, (2014) 395-406. [**ZbMath Indexed**]
34. **Rakesh Kumar** and Bhupender Kumar Som, An M/M/1/N Queuing System with Reverse Balking and Reverse Reneging, **Advanced Modeling and Optimization**, Volume 16, No. 2, (2014) 339-353. [**ZbMath Indexed**]
35. Sumeet Kumar Sharma and **Rakesh Kumar**, A Markovian feedback queue with retention of reneged customers, **AMO-Advanced Modeling and Optimization**, Vol. 14, No.3, (2012) 673-679. [**ZbMath Indexed**]
36. Sumeet Kumar Sharma and **Rakesh Kumar**, A Markovian feedback queue with retention of reneged customers and balking, **AMO-Advanced Modeling and Optimization**, Vol. 14, No.3, (2012), 681-688. [**ZbMath Indexed**]

37. **Rakesh Kumar**, An analysis of a non-Markovian queuing network model with correlated allocation using simulation technique, **ASOR (Australian Society for Operations Research) Bulletin**, Vol.28, No.4, (2009) 28-37. [ABDC indexed]
38. **Rakesh Kumar** and Bhupender Kumar Som and Sunidhi Jain, Optimizing Service Rate and the Capacity of an M/M/1/N Queuing System with Retention of Reneged Customers, **Indian Journal of Industrial and Applied Mathematics**, Vol. 5, No. 1 (2014), 53-63.
39. **Rakesh Kumar** and Bhupender Kumar Som, An M/M/1/N Queuing System with Reverse Balking, Reverse Reneging, and Retention of Reneged Customers, **Indian Journal of Industrial and Applied Mathematics**, Vol. 6, No.1, (2015) 73–79.
40. **Rakesh Kumar** and Bhupender Kumar Som, An M/M/1/N Feedback Queuing System with Reverse Balking, Reverse Reneging and Retention of Reneged Customers, **Indian Journal of Industrial and Applied Mathematics**, Vol. 6, No.2, (2015) 173–183.
41. **Rakesh Kumar**, A catastrophic-cum-restorative queuing model with correlated input for the cell traffic generated by new broadband services, **African Journal of Mathematics and Computer Science Research**, Vol. 2, No.10, (2009) 225-229.
42. N. K. Jain and **Rakesh Kumar**, A catastrophic queuing system with correlated batch arrivals and variable service capacity, **Bulletin of Pure and Applied Sciences, E. Mathematics and Statistics**, Vol. 25, No.1 (2006) 97-104. [Math Sci Net, ZbMath Indexed]
43. N. K. Jain and **Rakesh Kumar**, A two-step non-Markovian queuing network model with correlated allocation, **International Journal of Information and Computing Science**, Vol. 9, No. 1, (2006) 79-84.
44. **Rakesh Kumar**, Bhupender Kumar Som, and Sunidhi Jain, Optimization and Performance Analysis of Insurance Business-A Queueing Modeling Approach, **International Journal of Mathematical Sciences and Engineering Applications**, Vol. 7, No. 4(2013), 327-340.
45. N. K. Jain, **Rakesh Kumar** and Bhupender Kumar Som, An M/M/1/N Queuing System with Reverse Balking, **American Journal of Operational Research**, Vol. 4, No. 2 (2014) 17-20.

46. **Rakesh Kumar** and Bhupender Kumar Som, A Finite Capacity Single Server Queuing System with Reverse Reneging, **American Journal of Operational Research**, Vol. 5, No. 5, (2015) 125-128.
47. Sumeet Kumar Sharma and **Rakesh Kumar**, A Single-Server Markovian Feedback Queueing System with Discouraged Arrivals and Retention of Reneged Customers, **American Journal of Operational Research**, Vol. 4, No. 3, (2014) 35-39.
48. **Rakesh Kumar** and Sumeet Kumar Sharma, M / M / 1 Feedback Queueing Models with Retention of reneged customers and Balking, **American Journal of Operational Research**, Vol. 3, No. 2A, (2013) 1-6.
49. Gulab Singh Bura and **Rakesh Kumar**, Transient Analysis of a Limited Capacity Markovian Queueing System subjected to Varying Catastrophic Intensity and Restoration, **American Journal of Operational Research**, Vol. 3, No. 2A, (2013) 34-43.
50. **Rakesh Kumar**, Bhupender Kumar Som, and Sunidhi Jain, Modelling Insurance Business Facing Customer Impatience Using Queueing Theory, **American Journal of Operational Research**, Vol. 3, No. 2A, (2013) 44-47.
51. **Rakesh Kumar** and Sumeet Kumar Sharma, An M / M / 1 / N Queueing Model with Retention of reneged customers and Balking, **American Journal of Operational Research**, Vol. 2, No. 1, (2012) 1-5.
52. **Rakesh Kumar** and Sumeet Kumar Sharma, Formulation of product replacement policies for perishable inventory systems using queueing theoretic approach, **American Journal of Operational Research**, Vol. 2 No. 4, (2012), 27-30.
53. **Rakesh Kumar**, Rajiv Kumar and V. K. Sehgal, Time-Dependent solution of a queueing system with correlated bulk arrivals, catastrophe and restoration, **American Journal of Operational Research**, Vol.1, No.1, (2011), 1-4.
54. **Rakesh Kumar**, Steady state solution of a catastrophic-cum-restorative M/G/1 queueing system using supplementary variable technique, **Applied Mathematics**, Vol.1, No.2, (2011), 62-64.

## Research Publications in Conference Proceedings

55. **Rakesh Kumar** and Sapana Sharma, Transient analysis of a multi-server queuing model with discouraged arrivals and retention of renegeing customers, **Proceedings of the International Conference on Analytical and Computational Methods in Probability Theory and its Applications**, Russia during 23-27 October, 2017, pp 700-704.
56. **Rakesh Kumar** and Sapana Sharma, Transient numerical analysis of a single server Markovian queuing system with discouraged arrivals and retention of renegeing customers, **Proceedings of the 5<sup>th</sup> Annual International Conference of GSTF on Operations Research and Statistics**, Singapore during 6-7 March, 2017, pp 132-136.
57. **Rakesh Kumar** and Sumeet Kumar Sharma, A queuing model for performance analysis of an insurance business facing pre-mature surrenders of policies, **Proceedings of National Conference on Business Dynamics: Contemporary Issues and Challenges** at Management School, Kathua Campus, University of Jammu, (March 21-22, 2014), pp 50-58.
58. **Rakesh Kumar**, Optimization of a Single-server Finite Capacity Markovian Queueing System with Retention of Reneged Customers, **Proceedings of National Conference of advances in Mathematics and its applications**, NIT Hamirpur, (25-27 June, 2013), pp 317-320.

## **Books and Book Chapters Published**

- A. Authored a Book:** Non-Markovian Queues with Catastrophe and Restoration, **Lap-Lambert Academic Publishing (Germany)**, 2013, ISBN: 978-3-659-32895-4.
- B. (i) Edited a Special issue** on Advances in Queuing Theory and Applications, **American Journal of Operational Research (USA)**, Vol. 3A (2013) p-ISSN: 2324-6537, e-ISSN: 2324-6545.
- (ii) Edited a Special issue** on Queuing and Reliability Models with their Applications, **Reliability-Theory and Applications (USA)**, RT&A 2019, # 1(49) Vol.14. ISSN: 1932-2321.
- C. Authored the book Chapters:**



1. **Rakesh Kumar**, Performance Analysis of a Markovian Queuing System with Reneging and Retention of Reneged Customers, **Stochastic Processes and Models in Operations Research**, Chapter 6, ISBN13: 9781522500445. (2016), pp. 97-105, **IGI Global (USA)**..
2. **Rakesh Kumar** and Bhupender Kumar Som, An M/M/c/N Feedback Queuing Model with Reverse Balking and Reneging. In: Manchanda P., Lozi R., Siddiqi A. (eds) **Industrial Mathematics and Complex Systems. Industrial and Applied Mathematics**, (2017) pp 259-269, ISBN: 978-981-10-3757-3 (**Springer**).
3. **Rakesh Kumar**, Sapana Sharma and Gulab Singh Bura, Transient and steady-state behavior of a two heterogeneous servers' queuing system with balking and retention of reneging customers, K. Deep et al. (eds) **Performance Prediction and Analytics of Fuzzy, Reliability and Queuing Models, Asset Analytics**, (2019) [http://doi.org/10.1007/98-981-13-085-4\\_19](http://doi.org/10.1007/98-981-13-085-4_19). ISBN: 978-981-13-0857-4. (**Springer**)

### **Conferences Attended and Papers Presented/talks delivered (Abroad)**

1. Delivered a Plenary talk on Queuing Systems with Customers' Impatience and Retention in the 11<sup>th</sup> International conference on Operations Research for Sustainable Development, February 1-2, 2020 at Janapriya Multiple Campus, **Pokhara, Nepal**.
2. Research paper presented in the International Conference on Computer Networks-2019, **Gliwice, Poland** during June 25-27, 2019, paper presented entitled, "Transient Solution of a Heterogeneous Queuing System with Balking and Retention of Reneging Customers".
3. Research paper presented in the 7<sup>th</sup> meeting of the EURO Working Group on Stochastic Modelling (StochMod 2018), **Lancaster, UK** during 13-15 June, 2018, paper presented entitled, "An M/M/1/N Queuing model with self-regulatory servers and retention of impatient customers".
4. Research paper presented in the International Conference on Analytical and Computational Methods in Probability Theory and its Applications, **Russia** during 23-27 October, 2017, paper presented entitled, "Transient analysis of a multi-server queuing model with discouraged arrivals and retention of reneging customers".

5. Research paper presented in the 5<sup>th</sup> Annual International Conference of GSTF on Operations Research and Statistics, **Singapore** during 6-7 March, 2017, paper presented entitled, “Transient numerical analysis of a single server Markovian queuing system with retention of renegeing customers”.

### **Invited Talks Delivered in the Conferences**

1. Delivered an invited talk on Transient Analysis of Queuing Models in a National Workshop on Applications of Analysis, at Department of Mathematics, **University of Jammu, India** during 24-28 February, 2020.
2. Delivered an invited talk on Transient Solutions of Queuing Models in the 4<sup>th</sup> National Conference on Recent Trends in Mathematical Sciences in association with International Academy of Physical Sciences during 13-14 December, 2019 at School of Mathematics, **Shri Mata Vaishno Devi University, Katra, India.**
3. Delivered an invited talk on Mathematical Models and Applications of Queuing Systems in an International conference on Mathematics in Space and Applied Sciences during 29-30 November, 2019 at Department of Mathematics, **NSCBM Government Degree College, Hamirpur, H. P., India.**
4. Delivered an invited talk on Mathematical Modeling of Queuing Systems in National Mathematics Research Scholar Meet at Department of Mathematics, **University of Jammu, India** during 20-22 August, 2019.
5. Delivered a lecture on Basic Statistics-II in the FDP on Marketing Research & Business Analytics with Econometric Applications in Business Management at **School of Business, Shri Mata Vaishno Devi University, Katra** during 6-17 May, 2019.
6. Delivered an invited talk on Queuing Models with Retention of Impatient Customers’ in an international conference on Recent Inventions and Innovations in Mathematical Sciences at the **Department of Applied Mathematics, Andhra University, Visakhapatnam** during 28<sup>th</sup> February, 2019 to 1<sup>st</sup> March, 2019.
7. Delivered 09 lectures on Operations Research as a resource person in the Department of Mathematics, **Central University of Himachal Pradesh** in the workshop mode from 15<sup>th</sup> to 17<sup>th</sup> February, 2019.
8. Delivered two lectures on Introduction to Operations Research and its Applications in the Refresher Course in Mathematical Sciences organized by Department of Statistics,

University of Jammu in collaboration with **H.R.D.C University of Jammu** on 13<sup>th</sup> February, 2019.

9. Delivered an invited talk on Applications of Queuing Systems with customers' impatience in 27<sup>th</sup> international conference of Forum for Interdisciplinary Mathematics in conjunction with the 3<sup>rd</sup> convention of IARS on Interdisciplinary Mathematics, Statistics, and Computational Techniques during 2-4 November, 2018 at the **Department of Statistics, University of Jammu**.
10. Delivered a lecture on Data Interpretation in Research Methodology in the TEQIP-III funded two week refresher course on Introduction to MATLAB and Research Enhancement Tools at SECE in collaboration with **H.R.D.C. (S.M.V.D.U., Katra)** during 13-22 July, 2018.
11. Delivered an invited talk on Getting Familiar with Operations Research in a National Seminar on Recent Advances in Complex Analysis and Operator Theory and 27<sup>th</sup> Annual Conference of the **Jammu Mathematical Society** at University of Jammu, February 15-17, 2018.
12. Delivered an invited talk on Recent Developments in Queuing Systems with Customers' Impatience in two-days National Conference on Mathematical Sciences and its Applications organized by the **GGMSC, Jammu** during 19-20 January, 2018.
13. Delivered two lectures in 1 Week Faculty Development Program on Research Methodology at **H.R.D.C. (S.M.V.D.U., Katra)** during 4-8 December, 2017.
14. Delivered an invited talk on Role of Differential Equations in Mathematical Modelling in a National Seminar on Recent Advances in Differential Equations and their Applications during 3-4 February, 2017 at Department of Mathematics, **Meenakshi College for Women, Chennai**.
15. Delivered an invited talk on Modelling Queues with Customers' Impatience in National Conference on Advances in Mathematical Sciences during 21-22 December, 2016 at Department of Mathematics, **NSCBM Government Degree College, Hamirpur, H. P.**
16. Delivered an invited talk on Recent Advances in Queuing Modelling with Customers' impatience in National Seminar on Recent Advances in Mathematics and its Computational Aspects during 11-12 November, 2016 at **Department of Mathematics, SMP Government Girls P.G. College, Meerut, U.P.**
17. Delivered an invited talk on Queuing Systems with Customers' Impatience-Recent Extensions in Silver Jubilee Conference of the Jammu Mathematical Society and a National Seminar on Recent Developments in Complex Analysis, Operator Theory and

Related Areas during 20-22 October, 2016 at **Department of Mathematics, University of Jammu, Jammu.**

### **Conferences Attended and Papers Presented (India)**

1. Research paper presented in the 84<sup>th</sup> Annual Conference of Indian Mathematical Society: An International Meet, **School of Mathematics, Shri Mata Vaishno Devi University, Katra** during 27-30 November, 2018, paper presented entitled, “Time-dependent probabilities of a multi-server queuing model with customers’ impatience”.
2. Research paper presented in the International Conference on Economic Growth and Structural Changes: Trend, Pattern and Policies, School of Economics, **Shri Mata Vaishno Devi University, Katra** during 23-24 February, 2018, paper presented entitled, “Stochastic Modelling of an Order Picking System with Impatient Customers”.
3. Research paper presented in the 3<sup>rd</sup> National Conference on Recent Trends in Mathematical Sciences, Department of Mathematics, **Shri Mata Vaishno Devi University, Katra** during 9-10 February, 2017, paper presented entitled, “Transient solution of an M/M/1 Queuing System with renegeing and retention of renegeing customers”.
4. Research paper presented in the 3<sup>rd</sup> National Conference on Recent Trends in Mathematical Sciences, Department of Mathematics, **Shri Mata Vaishno Devi University, Katra** during 9-10 February, 2017, paper presented entitled, “Time-dependent solution of multi-server queuing system with renegeing and retention of renegeing customers”.
5. Research paper presented in an International Conference on Mathematical Techniques in Engineering Applications (ICMTEA 2016) at **Graphic Era University, Dehradun, India** during 29-30 April, 2016, paper presented entitled, “A heterogeneous queuing system with reverse balking and renegeing”.
6. Research paper presented in 18<sup>th</sup> Annual National Conference of Society of Statistics, Computer and Applications on Significance of Statistics as Interdisciplinary Science at Department of Statistics, **University of Jammu, Jammu** during February 18-20, 2016, paper presented entitled, “Multiple Server Queuing Models with Reverse Balking and Feedback”.
7. Research paper presented in an International Conference on the occasion of Silver Jubilee of the Indian Society of Industrial and Applied Mathematics at **Sharda**

- University**, Greater Noida, India during 29-31 January, 2016, paper presented entitled, “An M/M/c/N feedback queuing model with reverse balking and renegeing”.
8. Delivered a talk titled, “Markovian Queuing Systems With Reverse Balking” in the National Conference on Recent Trends in Mathematical Sciences (October 8-9, 2015) at School of Mathematics, **Shri Mata Vaishno Devi University, Katra**.
  9. Attended a National Conference on Recent Trends in Mathematical Sciences (October 8-9, 2015) at School of Mathematics, **Shri Mata Vaishno Devi University, Katra** and presented a paper titled, “An M/M/1/N Queuing system with Reverse Renegeing”.
  10. Attended a National Seminar on Make in India during 29-30 September, 2015 at School of Economics, **Shri Mata Vaishno Devi University, Katra** and presented a paper titled, “A Multi-Server Stochastic Queuing Model with Reverse Balking for an Investment Business Facing Customer Impatience”.
  11. Attended the 1<sup>st</sup> National case study conference at School of Business, **Shri Mata Vaishno Devi University, Katra** and presented a case study titled, Travelling Salesman Problem – A case study of Amul Distributor at Jammu during 24-26 April, 2015.
  12. Attended an International Conference on Emerging Areas of Mathematics for Science and Technology w. e. f. 30th January, 2015 to 1st February, 2015 at Department of Mathematics, **Punjabi University Patiala** and presented a paper entitled, “An M/M/1/N Queuing System with Reverse Balking, Reverse Renegeing, and Retention of Reneged Customers”.
  13. Attended the 10th JK Science Congress from 14<sup>th</sup> -16<sup>th</sup> March, 2015 at **University of Jammu** and presented the research paper, “Optimization of a single server Markovian feedback queuing system with retention of impatient customers”.
  14. Attended an ICSSR sponsored international conference titled “Shifting Paradigms in Applied Economics and Management: Course Correction” held on 1<sup>st</sup> -2<sup>nd</sup> August, 2014 at Faculty of management, **Shri Mata Vaishno Devi University, Katra** and presented the paper titled- ‘Design and Optimization of a Service System facing Customer Impatience and Discouraged Arrivals’.
  15. Attended a National Conference on Excellence in Management Education at Jaipuria **Institute of Management Studies, Ghaziabad** during 25<sup>th</sup> -26<sup>th</sup> April, 2013 and presented the paper titled ‘Design of Service System for Insurance Business facing Customer Impatience using Queuing Theory’.

16. Attended a Mathematical Festival-2013 at **JK Institute of Mathematical Sciences, Jammu** on 13<sup>th</sup> December, 2013 and presented a paper entitled, “A Perspective on the status of Mathematics in J&K”.
17. Attended a National Conference on Advances in Mathematics and its Applications at **National Institute of Technology, Hamirpur, HP** (June 25-27, 2013) and presented the research paper entitled ‘Optimization of a single server finite capacity Markovian queuing system with retention of reneged customers’.
18. Attended a national conference on Innovative Strategies for Science and Technology at **Inderprastha Engineering College, Ghaziabad** on November 30,2013 and presented a paper titled- Two heterogeneous servers queuing system with balking, renegeing and retention of reneged customers.
19. Attended a National Seminar on Strategic Dimensions of Value Chain for Sustainable Development, at College of Management, **Shri Mata Vaishno Devi University, Katra** on 1<sup>st</sup> September 2012 and presented the paper titled: ‘Selection of Spoilage Prevention Strategies in Supply Chains Using Queuing-Theoretic Approach’.
20. Attended a National Conference on Mathematical Analysis and Modelling, at **SRM University, Modinagar, Ghaziabad**, March 30-31, 2012 and presented the paper titled ‘A Markovian Queuing Model for Retention of Impatient Customers’.
21. Attended an AICTE Sponsored Seminar on Applications of Mathematics in Engineering Sciences, **N.C. College of Engineering, Panipat**, March 17, 2012 and presented the paper titled ‘An M/M/1/N queuing model with retention of reneged customers and balking’.
22. Attended the 44<sup>th</sup> Annual Convention of Operational Research Society of India (ORSI-2011) & an International Conference on Operations Research for Sustainable Development in Globalized Environment at **Calcutta Business School**, Diamond Harbour Road, Bishnupur, West Bengal, January 6-8, 2012 and presented the paper titled ‘Time-dependent solution of a queuing system with correlated bulk arrivals, catastrophe and restoration’.
23. Attended the 43<sup>rd</sup> Annual Convention of Operational Research Society of India & an International Conference on Operations Research for Urban and Rural Development, **Thiagarajar College of Engineering, Madurai**, December 15-17, 2010 and presented the papers titled ‘Operations Research in Energy Management-A case of Shri Mata Vaishno Devi University’ and the second ‘ A Catastrophic-cum-Restorative Queuing Problem with Correlated Input and Impatient Customers’.

24. Attended a National Conference on Advanced Manufacturing Techniques (NCAMT2009) at **Shri Mata Vaishno Devi University, Katra** (J&K) November 5-6, 2009 and presented the paper titled 'Operations Research Application in Managing Construction Projects'.
25. Attended the 3<sup>rd</sup> National Conference on Management Science and Practice, **IIM Ahmadabad** 22-24 March, 2008 and presented the paper titled 'Transient Solution of a Catastrophic-cum-Restorative M/M/2 Queue with Heterogeneous Servers'.
26. Attended the 10<sup>th</sup> Annual International Conference of Society of Operations Management, **IIM Ahmedabad**, 21-23 Dec 2006 and presented the paper titled 'Some Catastrophic Queuing Systems'.
27. Attended a National Conference on Advanced Manufacturing Techniques (NCAMT2009) at **Shri Mata Vaishno Devi University, Katra** (J&K) November 5-6, 2009 and presented the paper titled 'Operations Research Application in Managing Construction Projects'.
28. Attended the 3<sup>rd</sup> National Conference on Management Science and Practice, **IIM Ahmadabad** 22-24 March, 2008 and presented the paper titled 'Transient Solution of a Catastrophic-cum-Restorative M/M/2 Queue with Heterogeneous Servers'.
29. Attended the 37<sup>th</sup> Annual Convention of Operations Research Society of India (ORSI), **IIM- Ahmedabad**, 8-11 January, 2005 and presented the paper titled 'A two-step non-Markovian queuing network model with correlated allocation'.
30. Attended the 3<sup>rd</sup> Global Leadership Summit, Amity Business School, **Amity University, Noida**, November, 12-14, 2006, and presented the paper titled 'A Catastrophic Queuing System with Correlated batch Input'.
31. Attended the 91<sup>st</sup> Indian Science Congress, **Punjab University, Chandigarh**, 3-7 January, 2004.

### **Training Programmes Attended**

1. Attended **one week Faculty Development Program** on Teaching Sciences and Mathematics at Faculty Development Centre, SMVDU, Katra during January 21-25, 2019.
2. Attended a **Two months NPTEL-AICTE approved Faculty Development Programme** on Introduction to Operations Research from IIT Madras during August-September, 2018.

3. Attended a **Two weeks Refresher Course** on Introduction to MATLAB and Research Enhancement Tools at SECE in collaboration with HRDC, SMVDU, Katra during 20-29 October, 2018.
4. Attended a **Three day Faculty Development Program** on Effective Teaching– Learning in Higher Education during 4-6 July, 2018 at SMVDU, Katra.
5. Attended a **Two week AICTE approved Faculty Development Programme on Pedagogy for Online and Blended Teaching-Learning process** conducted by IIT Madras from 3-30 May, 2018.
6. Attended a **Two week AICTE approved Faculty Development Programme on Foundation Program in ICT for Education**, conducted by IIT Madras from 8<sup>th</sup> March -12<sup>th</sup> April, 2018.
7. Attended a **Two weeks Refresher Course** on Research Methodology at HRDC, SMVDU, Katra during 14-27 March, 2017.
8. Participated in **one week** TIES sponsored national workshop on “Basic Econometrics” w. e. f. 3<sup>rd</sup> March, 2014 to 8<sup>th</sup> March, 2014 at School of Business, Faculty of Management, Shri Mata Vaishno Devi University, Katra.
9. Participated in a **Two weeks** workshop on Control Systems under the National Mission on Education through ICT (MHRD, Govt. of India) during 2-12 December, 2014 conducted by IIT Kharagpur at SMVD University, Katra.
10. Attended a **Three week** Refresher course in Mathematical Science (Mathematics and Statistics) at UGC-ASC, University of Mysore w.e.f. 1-3-2013 to 21-3-2013.
11. Attended a **Four week** General Orientation Course at UGC-ASC, University of Jammu w. e. f. 20-11-2012 to 17-12-2012.
12. Attended a **TWO-DAY** ISTE WORKSHOP on Research Methods in Educational Technology Under the National Mission on Education through ICT (MHRD, Govt. of India) 2<sup>nd</sup> & 9<sup>th</sup> February 2013 at Shri Mata Vaishno Devi University, Katra.
13. Participated in a **six weeks** “Summer Faculty Research Fellow Programme-2012 at IIT Delhi” w. e. f. 4<sup>th</sup> June, 2012 to 13<sup>th</sup> July, 2012 under Quality Improvement Programme/Continuing Education Programme.
14. Participated in a **two weeks** AICTE approved Staff Development Programme on “ Introduction to MATLAB and Matrox Imaging Library with emphasis on hands on practice (WMMIL’11), December 16-29, 2011 at SECE, SMVD University, Katra, J&K.



15. Organized a Mathematics Session during INSPIRE camp at SMVDU, Katra, April 19-23, 2010.
16. Participated in one day Faculty Development Programme on “Developing Leadership Skills” at Jaipuria Institute of Management, Ghaziabad on 31<sup>st</sup> May, 2008.
17. Conducted an Academic Forum and deliberated on the topic “Live Projects as Pedagogical Tools) at Hindustan Institute of Management, SGI, Greater Noida.
18. Participated in a DST sponsored National symposium on “Applications of Statistics and Operations Research in Indian Industries” Dec. 17-20, 2007 at Indian Statistical Institute (ISI), Hyderabad.
19. Attended a Faculty Development Programme at Amity Business School, Amity University on May 13, 2006.
20. Attended a Faculty Development Workshop, at ICFAI National College, Meerut on “New and Innovative Pedagogy in Higher Education” January 24, 2006.
21. Attended a training programme in “Bio-Statistical Methods” at Institute for Research in Medical Statistics, ICMR, New Delhi during June 18-22, 2001.

### **Research Evaluation Work**

1. Evaluated the Ph.D. thesis titled, “A Transient Study of Queues with Impatience and Retention” for SMVD University, Katra.
2. Evaluated the Ph.D. thesis titled, “Analysis of Retrial and Perishable Inventory Models with Negative Customers, Service Interruptions and multiple working vacations” for Andhra University.
3. Evaluated the Ph.D. thesis titled, “Performance Analysis of Impatient Customer Queues with and without Working Vacations” for Andhra University.
4. Evaluated the M. Phil. Thesis titled, “Time dependent analysis of Markovian Queuing System subjected to catastrophes and restoration” for Banasthali University.
5. Evaluated the Ph.D. thesis titled, “Markovian Queueing Models for Retention of Impatient Customers” for SMVD University, Katra.
6. External Examiner for conducting the viva-voce of M.Sc. Mathematics students’ at Central University of Jammu on 12<sup>th</sup> May, 2018.
7. External Examiner for conducting the viva-voce of M.Sc. Mathematics students’ at Central University of Jammu on 20<sup>th</sup> May, 2019.

### **Volunteering Reviewing Work**

Actively engaged in the volunteer review work of many journals of Springer and Elsevier Journals.

## **Membership Professional Bodies**

1. Operational Research Society of India, Life Member
2. Indian Mathematical Society, Life Member
3. International Indian Statistical Association, Life Member
4. Indian Society of Industrial and Applied Mathematics, Life Member
5. Indian Society for Probability and Statistics, Life Member
6. Jammu Mathematical Society, Life Member
7. IAENG Society for Operations Research, Member
8. Indian Statistical Institute, Member
9. EURO working group on Stochastic Modelling (UK), Member
10. IEEE, Member

## **Web Profiles :**

**ResearchGate:** [https://www.researchgate.net/profile/Rakesh\\_Kumar168](https://www.researchgate.net/profile/Rakesh_Kumar168)

**GoogleScholar**

**Citations:** <https://scholar.google.co.in/citations?user=iXTY3zwAAAAJ&hl=en&authuser=2>

**Linkedin:** <https://www.linkedin.com/in/dr-rakesh-kumar-sharma-2772671b/>

**Math Sci Net (AMS):**<https://mathscinet.ams.org/mathscinet/search/author.html?mrauthid=774555>