

## Curriculum Vitae

Neeraj Misra

### Personal Details

Date of Birth August 29, 1963  
Nationality Indian  
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### Research Interests

- Entropy Estimation
- Applied Probability
- Theory of Stochastic Orders and Its Applications
- Estimation in Restricted Parametric Space
- Ranking and Selection Problems and Related Estimation Problems

### Education

1985-1991 Ph.D. in Statistics, Indian Institute of Technology Kanpur  
Title of the Dissertation: Simultaneous Selection of Extreme Populations: Optimal Decision Rules  
1983-1985 M.Sc. in Statistics, Indian Institute of Technology Kanpur  
1980-1982 B.Sc., Kanpur University

### Regular Academic Positions

August 2012 - Present	HAG Professor, Indian Institute of Technology Kanpur
December 2005 - August 2012	Professor, Indian Institute of Technology Kanpur
July 2002 - December 2005	Associate Professor, Indian Institute of Technology Kanpur
January 1996 - July 2002	Assistant Professor, Indian Institute of Technology Kanpur
April 1990 - September 1994	Lecturer, Panjab University, Chandigarh

### Visiting Academic Positions

1. September 1994 – January 1996      Research Fellow, Katholieke University, Belgium
2. February - March 1998                  Visiting Fellow, Panjab University, Chandigarh
3. May 2000 – December 2000          Research Fellow, Katholieke University, Belgium
4. January 2001 – June 2001              Assistant Professor, Marquette University, USA
5. July 2001 – July 2001                  Assistant Prof., West Virginia University, USA
6. October 2002                              Visiting Fellow, Panjab University, Chandigarh
7. December 2003                          Research Fellow, Katholieke University, Belgium
8. May 2004 – July 2004                  Research Fellow, West Virginia University, USA
9. December 2004                          Research Fellow, Katholieke University, Belgium
10. June 2005 – July 2005                 Research Fellow, West Virginia University, USA

### Awards and Honors

- Received commendation from the selection committee for the 'Teaching Innovator Award-2016' (an award initiated by the Ministry of Human Resource Development, Government of India) for experimenting "Flipped Classroom Blended Mode of Teaching". Over 300 applications were received for the award, of which 50 were shortlisted for the next round, and 15 of them made it to the finals. Out of these fifteen, seven are selected for the award and remaining eight are selected for commendation.

- **Jacob Wolfowitz Award 2003** for theoretical advances in Mathematical and Management Sciences for the research paper "Simultaneous Multiple Comparisons with the Worst and best", given by American Journal of Mathematical and Management Sciences, New York, USA.
- **C.L. Chandna Mathematics Award 2003** for distinguished and outstanding contributions to Mathematics research and teaching, given by Saraswati Vishvas Canada (a chapter of Canadian World Education Foundation).
- **Secured All India Rank No. 2** (with 99.04 percentile) in the Mathematics discipline of the Common Examination for Research Admissions 1985, conducted by I.I.T's.
- **General Proficiency Award** for the best outgoing student in the M.Sc. (Statistics) program of the I.I.T Kanpur.
- **Certificate of Merit** for academic excellence in the first year of the M.Sc. program of the I.I.T Kanpur.
- **Received appreciation letters** from the Chairman, Senate, on many occasions for outstanding teaching in various courses at the Indian Institute of Technology Kanpur.
- **Merit Cum Means scholarship** of the I.I.T. Kanpur during the M.Sc. program.

#### Administrative Experience

- **Dean of Academic Affairs**, Indian Institute of Technology, Kanpur (January 2015-June 2018).
- **Chairman, Senate Rules Committee**, IIT, Kanpur (2013-2014).
- **Chairman, JEE (Advanced)-2014**, IIT, Kanpur.
- **Senate nominee** to the Board of Governors of the Indian Institute of Technology Kanpur (2012-2013).
- **Senate Parliamentarian** of the Senate of the Indian Institute of Technology, Kanpur (2011-2012).
- **Head, Department of Mathematics & Statistics**, Indian Institute of Technology Kanpur, India, September 2008 – September 2011.
- **Organizing Chairman**, Joint Admission Test for M.Sc.-2008 (JAM-2008) conducted for admissions into two year master programs offered at various IITs.
- **Vice Chairman**, Graduate Aptitude Test in Engineering – 2008 (GATE-2008) conducted by IITs on behalf of the Ministry of Human Resources and Development for admissions into various Post Graduate programs in India.
- **Vice Chairman**, Joint Admission Test for M.Sc.-2007 (JAM-2007) conducted for admissions into two year master programs offered at various IITs.
- **Games Counselor**, Student Gymkhana, Indian Institute of Technology Kanpur (March 2004 – March 2005).

- Chairman, Games and Sports Committee, Student Gymkhana, Indian Institute of Technology Kanpur (March 2004 – March 2005).
- Chairman, Kislaya Nursery School, Indian Institute of Technology Kanpur (December 2002 – April 2004).
- Vice Chairman, Combined Pre Medical Test – 2000 (CPMT-2000) conducted for admissions into various medical colleges in the state of Uttar Pradesh.
- Chairman, Campus Security Advisory Committee, Indian Institute of Technology Kanpur (April 1999 – April 2000).
- Chairman, Campus Security Executive Committee, Indian Institute of Technology Kanpur (April 1999 – April 2000).
- Warden and Warden Incharge, Hall of Residence – II, Indian Institute of Technology Kanpur (October 1996 – April 1999).

#### Participation in National Level Committees

1. Member of a committee constituted by Central Board of secondary Education for normalization of marks of various boards.
2. Member of a committee of IIT Council for conversion of ISM, Dhanbad into an IIT.
3. Member of a committee to draft statutes of IIT (BHU) Varanasi.
4. Convener of Research Development Council of Abdul Kalam Technical University, Lucknow.

#### Ph.D. Theses Supervision

S.No.	Name of the Student	Year	Title of Thesis
1.	Rajesh Anand	1994	Some Estimation Problems Related to Ranking & Selection
2.	Suresh Kumar Sharma	1995	Some Interval and Point Estimation Problems In Ranking and Selection
3.	Gaurav Garg	2009	Estimation of Regression Coefficients In Restricted Measurement Error Models
4.	Nitin Gupta	2010	Some Contributions to the Theory of stochastic Orders and Their Applications.
5	Amit Kumar Mishra	2012	Stochastic Comparisons of Some Models in Reliability Theory

6	Mohd. Arshad	2015	Selection and Related Estimation Problems Involving Gamma and Exponential Populations.
7	Sameen Naqvi	2017	A Study on Stochastic Properties of Mixture Models
8	Jisa Francis	2018	Relative Ageing of Some Life Distributions
9	Naresh Garg		Continuing
10	Rahul Singh		Continuing
11	Masihuddin		Continuing

### Published Research Work

#### A. Research Papers Published in Referred Journals

1. Selecting the better of two binomial populations: Optimal decision rules. *Calcutta Statistical Association Bulletin*, 1989, 38, 157-167. (jointly with I.D. Dhariyal)
2. Preservation of phase type distributions under Poisson shock models. *Advances in Applied Probability*, 1992, 24, 223-225. (jointly with M. Manoharan and Harshinder Singh).
3. Preservation of some ageing properties by order statistics. *Probability In Engineering and Informational Sciences*, 1993, 7, 437-440. (jointly with M. Manoharan and Harshinder Singh).
4. Estimation of the smaller and larger scale parameters of two uniform distributions. *Statistics & Decisions*, 1993, Suppl. 3, 115-132. (jointly with Rajesh Anand and Harshinder Singh).
5. Estimation of parameters of an exponential distribution when the parameter space is restricted. *Communications in Statistics-Theory & Methods*, 1993, 22(2), 461-477. (jointly with Harshinder Singh and R.D. Gupta).
6. Simultaneous confidence intervals for all distances from the worst and best populations. *Communications in Statistics-Theory & Methods*, 1993, 22(11), 3097-3116. (jointly with I.D. Dhariyal).
7. On the UMVUE for estimating the parameter of the selected exponential population. *Journal of the Indian Statistical Association*, 1993, 31(1), 61-69. (jointly with G.N.

- Singh). (Erratum: On the UMVUE for estimating the parameter of the selected exponential population. *Journal of the Indian Statistical Association*, 1994, 32, 69.)
8. A note on confidence intervals and probability of correct selection: The scale parameter case. *Journal of the Indian Statistical Association*, 1993, 31(2), 115-123. (jointly with A.N. Gill and S.K. Sharma).
  9. Non-minimaxity of natural decision rules under heteroscedasticity. *Statistics and Decisions*, 1994, 12, 79-98. (jointly with I.D. Dhariyal).
  10. Estimation of ordered location parameters: The exponential distribution. *Statistics*, 1994, 25, 239-249. (jointly with Harshinder Singh).
  11. Simultaneous confidence intervals for all ratios to the best: The exponential distribution. *IEEE Transactions of Reliability*, 1994, 43(1), 61-64. (with Narinder Kumar and A.N. Gill).
  12. Estimating the ratio of the smaller and the larger of two uniform scale parameters. *Journal of Statistical Computation and Simulation*, 1994, 50, 197-211. (jointly with A. Mitra, D. Kundu and I.D. Dhariyal).
  13. On redundancy allocations in systems. *Journal of Applied Probability*, 1994, 31, 1004-14. (jointly with Harshinder Singh).
  14. Simultaneous selection of extreme populations: Bayes-P\* and minimax rules. *Communications in Statistics - Theory & Methods*, 1994, 23(7), 1963 -1992. (jointly with I.D. Dhariyal).
  15. Simultaneous selection of extreme populations: A Bayesian approach. *Communications in Statistics - Theory & Methods*, 1994, 23(7), 1993 -2028. (jointly with I.D. Dhariyal).
  16. Estimation of the largest location parameter of exponential distributions. *Communications in Statistics - Theory & Methods*, 1994, 23(10), 2865-2880. (jointly with Rajesh Anand and Harshinder Singh).
  17. Estimation of the average worth of the selected subset of gamma populations. *Sankhya, Ser.B*, 1994, 56, 344-355.
  18. Selection of good populations: The scale parameter case. *South African Statistical Journal*, 1994, 27, 11-21. (jointly with S.K. Sharma and A.N. Gill).
  19. Some inadmissibility results for estimating ordered uniform scale parameters. *Communications in Statistics - Theory & Methods*, 1995, 24(3), 675-685. (jointly with I.D. Dhariyal).
  20. Componentwise estimation of ordered parameters of  $k$  ( $\geq 2$ ) exponential populations. *Annals of Institute of Statistical Mathematics*, 1995, 47(2), 287-307. (jointly with G. Vijajasree and Harshinder Singh).
  21. Selecting the best exponential population when the scale parameters are bounded. *Statistics*, 1995, 27, 151-158. (jointly with N. Kumar).

22. Estimation of the smaller and larger scale parameters of two exponential distributions. *Statistics & Decisions*, 1997, 15, 75-98. (jointly with R. Anand and H. Singh).
23. Simultaneous confidence bounds for the ratios of scale parameters. *Statistics & Decisions*, 1997, 15, 165-181. (jointly with A.N. Gill and S.K. Sharma).
24. On the minimax decision rules in ranking problems. *Statistics and Probability Letters*, 1997, 34, 179-186. (jointly with Naveen K. Bansal and E.C. van der Meulen).
25. On estimation of the common mean of  $k$  ( $\geq 2$ ) normal populations with order restricted variances. *Statistics & Probability Letters*, 1997, 36, 261-267. (jointly with E.C. van der Meulen).
26. Estimation after subset selection from exponential populations: Location parameter case. *American Journal of Mathematical and Management Sciences*, 1997, 18, 3-4, 291-326. (jointly with Rajesh Anand and Harshinder Singh).
27. On ranking treatment effects in a general linear model. *Journal of Statistical Planning and Inference*, 1999, 78, 1-11. (jointly with Naveen K. Bansal).
28. Estimating the true probability of correct selection: Two exponential distributions. *American Journal of Mathematical and Management Sciences*, 2001, 21, 109-124. (jointly with S.K. Sharma & A.N. Gill).
29. A new test of entropy based on overlapping sample spacings. *Communications in Statistics-Theory & Methods*, 2001, 30(7), 1435-1470. (jointly with E.C. van der Meulen).
30. On estimation following selection from nonregular distributions. *Communications in Statistics-Theory & Methods*, 2001, 30(12), 2543-2562. (jointly with E.C. van der Meulen).
31. Likelihood ratio test for simultaneous testing of mean and variance of a normal distribution. *Journal of Statistical Computation and Simulation*, 2001, 71(4), 313-334. (jointly with D. Kundu and P.K. Choudhary).
32. Smooth estimators for estimating order restricted scale parameters of two gamma distributions. *Metrika*, 2002, 56, 143-161. (jointly with I.D. Dhariyal, D. Kundu and P.K. Choudhary).
33. Natural estimators for the larger of two exponential location parameters with a common unknown scale parameter. *Statistics & Decisions*, 2002, 20, 67-80. (jointly with I.D. Dhariyal & D. Kundu).
34. Simultaneous multiple comparisons with the worst and best. *American Journal of Mathematical and Management Sciences*, 2002, 22, 115-139. (jointly with S.K. Sharma & A.N. Gill).
35. On stochastic properties of  $m$ -spacings. *Journal of Statistical Planning and Inference*, 2003, 115, 683-697. (jointly with E.C. van der Meulen).

36. On estimating the mean of the selected normal population under the LINEX loss function. *Metrika*, 2003, 58, 173-183. (jointly with E.C. van der Meulen).
37. On estimating the largest scale parameter. *Journal of Statistical Theory and Applications*, 2003, 2, 255-266. (jointly with N.K. Bansal & G.G. Hamedani).
38. Nearest neighbor estimates of entropy. *American Journal of Mathematical and Management Sciences*, 2003, 23, 301-321. (jointly with H. Singh, Vladimir Hnizdo, Adam Fedorowicz and E. Demchuk).
39. Stochastic comparisons of Poisson and binomial random variables with their mixtures. *Statistics and Probability Letters*, 2003, 65, 279-295. (jointly with H. Singh & E.J. Harner).
40. Reliability properties of reversed residual lifetime. *Communications in Statistics-Theory & Methods*, 2003, 32, 2031-2042. (jointly with A.K. Nanda, H. Singh & P. Paul).
41. Letter to the editor: Reliability properties of reversed residual lifetime. *Communications in Statistics-Theory & Methods*, 2004, 33, 991-992. (jointly with A.K. Nanda, H. Singh & P. Paul).
42. The LINEX risk of maximum likelihood estimators of parameters of normal populations having order restricted means. *Sankhya*, 2004, 66, Part 4, 652-677. (jointly with S.K. Iyer & H. Singh).
43. Estimation of the entropy of a multivariate normal distribution. *Journal of Multivariate Analysis*, 2005, 92, 324-334. (jointly with H. Singh & E. Demchuk).
44. Estimation of order restricted concentration parameters of von Mises distributions. *Communications in Statistics-Simulations and Computations*, 2005, 34(1), 21-40. (jointly with H. Singh and S. Li).
45. A subset selection procedure for selecting the exponential population having the longest mean lifetime when the guarantee times are the same. *Communications in Statistics-Theory & Methods*, 2005, 34(7), 1555-1569. (jointly with S. Kumar, E.C. van der Meulen & Y.M. Tripathi).
46. Some properties of order statistics when the sample size is random. *Communications in Statistics-Theory & Methods*, 2005, 34(11), 2105-2113. (jointly with A.K. Nanda, P. Paul and H. Singh.)
47. James-Stein type estimators for ordered normal means. *Journal of Statistical Computation and Simulation*, 2005, 75(7), 501-511. (jointly with S. Kumar & Y.M. Tripathi).
48. On some inadmissibility results for the scale parameter of selected gamma population. *Journal of Statistical Planning and Inference*, 2006, 136, 2340-2351. (jointly with E.C. van der Meulen and Karlien Vanden Branden).
49. On estimating the scale parameter of the selected gamma population under the scale invariant squared error loss function. *Journal of Computational and Applied*



- Mathematics, 2006, 86(1), 268-282. (jointly with E.C. van der Meulen and Karlien Vanden Branden).
50. Selecting the least dispersive population. *Journal of Applied Statistical Sciences*, 2007, 15(1), 111-126. (Jointly with N. Kumar).
  51. Restricted regression estimation in measurement error models. *Computational Statistics and Data Analysis*, 2007, 52, 1149-1166 (jointly with Shalabh and G Garg).
  52. Stochastic properties of residual life and inactivity time at a random time. *Stochastic Models*, 2008, 24(1), 89-102 (jointly with N. Gupta and I.D. Dhariyal).
  53. Preservation of some aging properties and stochastic orders by weighted distributions. *Communications in Statistics – Theory & Methods*, 2008, 37(3-5), 627-644 (jointly with N. Gupta and I.D. Dhariyal).
  54. kn-nearest neighbor estimators of entropy. *Mathematical Methods in Statistics*, 2008, 17(3), 261-277 (jointly with R. M. Mnatsakanov, Sh Li and E.J. Harner).
  55. Stochastic comparisons of multivariate frailty models. *Journal of Statistical Planning and Inference*, 2009, 139, 2084-2090 (jointly with Nitin Gupta).
  56. Use of prior information in the consistent estimation of regression coefficients in measurement error models. *Journal of Multivariate Analysis*, 2009, 100(7), 1498-1520 (jointly with Shalabh and G Garg).
  57. Optimal allocation of active spares in series systems and comparison of component and system redundancies. *Journal of Applied Probability*, 2009, 46(1), 19-34 (jointly with N. Gupta and I. D. Dhariyal).
  58. Consistent estimation of regression coefficients in ultrastructural measurement error model using stochastic prior information. *Statistical Papers*, 2010, 51(3), 717-748 (jointly with Shalabh and G Garg).
  59. Nearest neighbor estimates of entropy for multivariate circular distributions. *Entropy*, 2010, 12(5), 1125–1144 (jointly with H Singh and H Vladimir).
  60. An overview of the concepts and techniques of data mining. *Journal of Indian Statistical Association*, 2010, 48(1), 65-102. (jointly with A Mitra).
  61. Standby redundancy allocations in series and parallel systems. *Journal of Applied Probability*, 2011, 48(1), 43-55 (jointly with A K Mishra and I D Dhariyal).
  62. Active redundancy allocations in series systems. *Probability in Engineering and Informational Sciences*, 2011, 25(2), 219-235 (jointly with A K Mishra and I D Dhariyal).
  63. Reliability under random operating environment: Frailty Models. *Journal of Combinatorics, Information and System Sciences*, 2011, 35 No. 1-2, 117-133 (jointly with N Gupta and I D Dhariyal).
  64. A note on active redundancy allocations in k-out-of-n systems. *Statistics and Probability Letters*, 2011, 81(10), 1518-1523 (jointly with A K Mishra).

65. Estimation of Regression Coefficients in a Restricted Measurement Error Model using Instrumental Variables. *Communications in Statistics - Theory & Methods*, 2011, 40, 3614-3629.
66. Stochastic properties of conditionally independent mixture models. *Journal of Statistical Planning and Inference*, 2012, 142(6), 1599-1607 (jointly with A K Mishra).
67. New results on stochastic comparisons of two-component series and parallel systems. *Statistics & Probability Letters*, 2012, 82(2), 283-190 (jointly with A K Mishra).
68. On comparison of reversed hazard rates of two parallel systems comprising of independent gamma components. *Statistics & Probability Letters*, 2013, 83(6), 1567-1570 (jointly with A K Mishra).
69. A study based ranking of LiDAR data visualization schemes aided by georectified aerial images. *Cartography and Geographic Information Science*, 2014, 41(2), 138-150 (jointly with S Ghosh and B Lohani).
70. Estimating the common location of two exponential populations under order restricted failure rates. *American Journal of Mathematical and Management Sciences*, 2014, 33(2), 125-146 (jointly with M R Tripathy and S Kumar).
71. Selecting the best of two gamma populations having unequal shape parameters. *Statistical Methodology*, 2014, 18, 41-63 (jointly with Mohd. Arshad)..
72. Monotonicity of certain integrals involving gamma distributions and their applications in multiple comparisons. *Statistics and Probability Letters*, 2014, 85, 144-152 (jointly with Mohd. Arshad).
73. Estimation after selection from gamma populations with unequal known shape parameters. *Journal of Statistical Theory and Practice*, 2015, 9(2), 395-418 (jointly with M Arshad and P Vellaisamy).
74. Stochastic comparisons of residual lifetimes and inactivity times of coherent systems with dependent identically distributed components. *European Journal of Operations Research*, 2015, 240(2), 425-430 (jointly with N Gupta and S Kumar).
75. Selecting the exponential population having the larger guarantee time with unequal sample sizes. *Communications in Statistics - Theory & Methods*, 2015, 44(19), 4144-4171 (jointly with M. Arshad).
76. Relative ageing of  $(n-k+1)$ -out-of- $n$  systems. *Statistics and Probability Letters*, 2015, 106, 272-280 (jointly with Jisha Francis).
77. Estimation after selection from uniform populations with unequal sample sizes. *American Journal of Mathematical and Management Sciences*, 34(4), 367-391 (jointly with M Arshad).
78. Estimation after selection from exponential populations with unequal scale parameters. *Statistical Papers*, 2016, 57(3), 605-621 (jointly with M. Arshad).
79. Classification rules for two parameter exponential populations under order restrictions on parameters. *Journal of Statistical Computation and Simulation*, 2016, 86(8), 1559-1581 (jointly with N Jana and S Kumar).

80. Some sufficient conditions for relative ageing of life distributions. *Probability in Engineering and Sciences*, 2017, 31(1), 83-99 (jointly with J Francis and S Naqvi).
81. Stochastic properties of inactivity lifetimes at random times: Some unified results. *American Journal of Mathematical and Management Sciences*, 2017, 36(2), 85-97 (jointly with S Naqvi).
82. Some unified results on stochastic properties of residual lifetimes at random times. *Brazilian Journal of Probability and Statistics*, 2018, 32(2), 422-436 (jointly with S Naqvi)
83. Stochastic comparison of residual lifetime mixture models. *Operations Research Letters*, 2018, 46(1), 122-127 (jointly with S Naqvi).
84. A unified approach to stochastic comparisons of multivariate mixture models. *Communications in Statistics, Theory & Methods*, 2018, DOI: 10.1080/03610926.2018.1445859 (jointly with S Naqvi)

**B. Research Papers Published in Books/Proceedings**

85. Estimation after subset selection from uniform populations. *Frontiers in Probability and Statistics (Calcutta 1994/ 1995)*, 1998, 1-15, Narosa, New Delhi. (jointly with H. Singh and R. Anand).
86. Simultaneous selection of extreme populations: Optimal two stage decision rules. *Advances in ranking and selection, multiple comparisons, and reliability*, 2005, 143—161, *Stat. Ind. Tehnol.*, Birkhäuser Boston, Boston, MA. (jointly with I.D. Dhariyal).
87. Stochastic comparisons and aging properties of multivariate reversed frailty models. *Proceedings of International Conference on Mathematical Sciences-2007 (ICMS-2007) Bangi-Putrajaya, Malaysia*, 200, 993-1015 (jointly with N. Gupta and R. D. Gupta).
88. Classification rules for exponential populations under order restriction on parameters. *Mathematics and Computing*, 2013, 243-250, Springer (jointly with N Jana and S Kumar).

**C. Books/Web Courses**

Prepared a web course on "Probability and Distributions" for National Programme on Technology Enhanced Learning (NPTEL): <http://nptel.ac.in/courses/111104032/>