

# CURRICULUM VITAE

**S.M.SUNOJ**, M.Sc, Ph.D

**SENIOR PROFESSOR**  
**DEPARTMENT OF STATISTICS**  
**COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
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## PRESENT POSITION

Dean, Faculty of Science, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA (15-09-2023 onwards)

Member, Syndicate, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA (15-09-2023 onwards)

Head (since 03-01-2023), Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA

Senior Professor (since 25-9-2023), Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA

Nodal Officer, All India Survey on Higher Education, Cochin University of Science and Technology, July 2015 onwards

## FORMER POSITION

Member, Syndicate (22-02-2019 to 02-01-2023), Cochin University of Science and Technology, Cochin

Professor (23-9-2013 to 24-09-2023), Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA

Associate Professor (23-9-2010 to 22-9-2013), Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA

Assistant Professor (1-1-2006 to 22-9-2010), Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA

Reader (23-09-2007 to 11-4-2010), Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA

Lecturer (Senior Scale) (23-09-2002 to 22-9-2007), Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA

Lecturer (28-03-2001 to 22-09-2002), Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala State, INDIA

Lecturer (23-09-1998 to 27-03-2001), Department of Statistics, Government Sanskrit College (affiliated to University of Calicut, Kerala), Pattambi, Kerala State, INDIA

### **EDUCATIONAL QUALIFICATIONS**

- M.Sc, PhD
- PhD, Cochin University of Science and Technology, Kerala, India, 1999 M.Sc (Statistics), University of Calicut, Kerala, India, 1994

### **ACHIEVEMENTS (FELLOWSHIPS, AWARDS ETC.)**

- MATRICS Fellowship, SERB, India, 2020-2023
- International Travel Support, SERB, India, 2019
- NET and CSIR JRF, Joint UGC-CSIR Examination, 1994
- First Rank, M.Sc (Statistics), University of Calicut, 1994
- Third Rank, B.Sc (Statistics), University of Calicut, 1992

### **EXPERIENCE**

- Teaching : 25 years
- Research Experience : 28 years
- No. of Ph.D successfully supervised : 8
- No. of Ph.D successfully supervised : 2

### **AREAS OF RESEARCH**

Reliability Modelling, Information Measures, Distribution Theory

## **PUBLICATIONS**

- Research papers in refereed journals : 92
- General Articles : 2
- Books : 1

## **TITLE OF THE THESIS (PhD)**

Some characterizations of bivariate weighted distributions

## **PhD SUPERVISED**

1. David Chris Raju (Reg. 5815): Cumulative Tsallis Entropy and its associate measures: Properties and applications, 2023.
2. Silpa Subhash (Reg. No. 5816): Modelling and analysis of quantile-based information measures and their applications, 2023.
3. Rasin, R.S. (Reg. No. 4667): Modelling and analysis of lifetime data using ageing intensity functions, 2022.
4. Aswathy S. Krishnan (Reg. No. 4905): A study on some information measures using quantile functions, 2020.
5. Vipin, N. (Reg. No. 4800): Bivariate and conditional partial moments: Some properties and applications, 2019
6. Sreejith, T.B. (Reg. No. 3657): Some properties of Reciprocal Coordinate Subtangent in the context of stochastic modelling, 2018.
7. Linu, M.N. (Reg. No. 3392): Characterizations of probability models using some dynamic information measures, 2016.
8. Maya, S.S. (Reg. No. 2633): Some properties of weighted distributions for truncated random variables, 2008.

## **PhD CO-SUPERVISED**

1. Aswin, I.C. (Reg. No. 5818): Modelling lifetime data using quantile-based reliability measures, 2023.
2. Richu Rajesh (Reg. No. 5813): Nonparametric estimation of information measures under length-biased sampling and its applications, 2023.

## **LIST OF PAPERS PUBLISHED (ACCEPTED) IN PEER REVIEWED JOURNALS**

1. Sunoj, S.M. and Nair, N.U. (1998): Characterization of some bivariate life distributions by weighted models, *Journal of Applied Statistical Science*, USA, 7(4), 239-248, ISSN 1067-5817.

2. Sunoj, S.M. and Nair, N.U. (1998): Form-invariant bivariate weighted Pearson system, *Far East Journal of Theoretical Statistics*, India, 2(2), 157-170, ISSN 0972-0863.
3. Sunoj, S.M. and Nair, N.U. (2000) Bivariate distributions with weighted marginals and reliability modeling, *Metron*, Italy, 57(3-4), 117-126, ISSN 026-1424 (Impact Factor: 0.222).
4. Sunoj, S.M. (2000): Weighted distributions – a bibliography, *Statistical Methods*, India, 2(1), 81-95.
5. Nair, N.U. and Sunoj, S.M. (2003): Form-invariant bivariate weighted models, *Statistics*, Germany, 37(3), 259-269, ISSN 0233-1888 (Impact Factor: 0.53).
6. Nair, N.U. and Sunoj, S.M. (2003): Reliability modeling in bivariate Pearson system, *Statistical Methods and Practice – Recent Advances*, N.Balakrishnan, N.Kannan and M.R.Srinivasan (Eds.), Narosa Publishing House, New Delhi, India, 333-339, ISBN 81-7319-483-1.
7. Sankaran, P.G and Sunoj, S.M. (2004): Identification of models using failure rate and mean residual life of doubly truncated random variables, *Statistical Papers*, Germany, 45, 97-109, ISSN 0932-5026 (Impact Factor: 0.781).
8. Sunoj, S.M. (2004): Characterizations of some continuous distributions using partial moments, *Metron*, Italy, LXII (3), 353-362, ISSN 0026-1424 (Impact Factor: 0.222).
9. Sunoj, S.M. and Sankaran, P.G. (2005): Some characterizations of bivariate weighted distributions in the context of reliability modeling, *Calcutta Statistical Association Bulletin*, India, 27, 179-193, ISSN 0008-0683.
10. Sunoj, S.M. and Maya, S.S. (2006): Some properties of weighted distributions in the context of repairable systems, *Communication in Statistics – Theory and Methods*, USA, 35(2), 223-228, ISSN 0361-0926 (Impact Factor: 0.298).
11. Sunoj, S.M., Sankaran, P.G. and Maya, S.S. (2007): Characterizations of distributions using log odds rate, *Statistics*, Germany, 41(5), 443-451, ISSN 0233-1888 (Impact Factor: 0.53).
12. Sunoj, S.M. and Maya, S.S. (2008): The role of lower partial moments in stochastic modeling, *Metron*, Italy, LXVI (2), 219-238, ISSN 0026-1424 (Impact Factor: 0.222).
13. Maya, S.S. and Sunoj, S.M. (2008): Some dynamic generalized information measures in the context of weighted models, *Statistica*, Italy, anno LXVIII (1), 71-84, ISSN 1973-2201.
14. Sunoj, S.M., Sankaran, P.G. and Maya, S.S. (2009): Characterizations of distributions using conditional expectations of doubly (interval) truncated random variables, *Communication in Statistics - Theory and Methods*, USA, 38, 1441-1452, ISSN 0361-0926 (Impact Factor: 0.298).
15. Maya, S.S. and Sunoj, S.M. (2010): Some characterizations of distributions for repair time (past lifetime) in the context of size/length-biased models, *Journal of Statistical Theory and Applications*, USA, 9(1), 125-141, ISSN 1538-7887.
16. Navarro, J., Sunoj, S.M. and Linu, M.N. (2011): Characterizations of bivariate models using dynamic Kullback-Leibler discrimination measures, *Statistics and Probability Letters*, USA, 81(1), 1594-1598, ISSN 0167-7152 (Impact Factor: 0.498).

17. Sunoj, S.M. and Linu, M.N. (2012): Dynamic cumulative residual Renyi's entropy, *Statistics*, Germany, 46(1), 41-56, ISSN 0233-1888 (Impact Factor: 0.53).
18. Sunoj, S.M. and Sreejith, T.B. (2012): Some results on reciprocal subtangent in the context of weighted models, *Communication in Statistics - Theory and Methods*, USA, 41(1), 1397-1410, ISSN 0361-0926 (Impact Factor: 0.298).
19. Sunoj, S.M. and Linu, M.N. (2012): On bounds of some dynamic information divergence measures, *Statistica*, Italy, anno LXXII (1), 23-36, ISSN 1973-2201.
20. Sunoj, S.M. and Sankaran, P.G. (2012): Quantile based entropy function, *Statistics and Probability Letters*, USA, 82, 1049-1053, ISSN 0167-7152 (Impact Factor: 0.531).
21. Sunoj, S.M. and Linu, M.N. (2012): Cumulative measure of uncertainty for conditionally specified models, *Calcutta Statistical Association Bulletin*, India, 64 (253254), 59-78, ISSN 0008-0683.
22. Sunoj, S.M., Sankaran, P.G. and Nanda, A.K. (2013): Quantile based entropy function in past lifetime, *Statistics and Probability Letters*, USA, 83, 366-372, ISSN 0167-7152 (Impact Factor: 0.531).
23. Nair, N.U., Sankaran, P.G. and Sunoj, S.M. (2013): Quantile based stop-loss transform and its applications, *Statistical Methods and Applications*, Italy, 22, 167-182, ISSN 1618-2510 (Impact Factor: 0.351).
24. Nair, N.U., Sankaran, P.G. and Sunoj, S.M. (2013): Quantile based reliability aspects of partial moments, *Journal of the Korean Statistical Society*, Korea, 42, 329-342, ISSN 1226-3192 (Impact Factor: 0.442).
25. Nanda, A.K, Sankaran, P.G. and Sunoj, S.M. (2014): Residual Renyi's entropy: A quantile approach, *Statistics and Probability Letters*, USA, 85, 114-121, ISSN 0167-7152 (Impact Factor: 0.531).
26. Navarro, J., Sunoj, S.M. and Linu, M.N. (2014): Characterizations of bivariate models using some dynamic conditional information divergence measures, *Communications in Statistics - Theory and Methods*, USA, 43(9), 1939-1948, ISSN 03610926 (Impact Factor: 0.298).
27. Sunoj, S.M., Sreejith, T.B. and Navarro, J. (2014): Characterizations of some bivariate models using reciprocal coordinate subtangents, *Statistica*, Italy, anno LXXIV, 2, 153-170, ISSN 1973-2201.
28. Sunoj, S.M. and Sreejith, T.B. (2014): On discrete analogue of reciprocal coordinate subtangent and its role in characterization problems, *Calcutta Statistical Association Bulletin*, India, ISSN 0008-0683, 66 (263-264), 123-135.
29. Sankaran, P.G., Sunoj, S.M. and Nair, N.U. (2016): Kullback-Leibler divergence: A Quantile Approach, *Statistics and Probability Letters*, USA, 111, 72-79, ISSN 0167-7152 (Impact Factor: 0.531).
30. Sunoj, S.M., Aswathy S. Krishnan and Sankaran, P.G. (2017): Quantile-based entropy of order statistics, *Journal of the Indian Society for Probability and Statistics*, India, 18(1), 1-17, ISSN 2364-9569, DOI.10.1007/s41096-016-0014-4.

31. Sankaran, P.G. and Sunoj, S.M. (2017): Quantile-based cumulative entropies, *Communications in Statistics – Theory and Methods*, USA, 46(2), 805-814, ISSN 03610926 (Impact Factor: 0.298).
32. Kayal, S. and Sunoj, S.M. (2017): Generalized dynamic conditional Kerridge's inaccuracy measure for conditionally specified models, *Communications in Statistics - Theory and Methods*, USA, 46(16), 8257-8268, ISSN 0361-0926 (Impact Factor: 0.298).
33. Toomaj, A., Sunoj, S.M. and Navarro, J. (2017): Some properties of cumulative residual entropy for coherent systems, *Journal of Applied Probability*, UK, 54, 1-15, ISSN 0021-9002 (Impact Factor: 0.83).
34. Sunoj, S.M. and Vipin, N. (2019): Some properties of conditional partial moments in the context of stochastic modeling, *Statistical Papers*, 60, 1971-1999, DOI 10.1007/s00362-017-0904x, Germany, ISSN: 0932-5026 (Impact Factor: 0.781).
35. Kayal, S., Sunoj, S.M. and Rajesh, G. (2017): On dynamic generalized measures of inaccuracy, *Statistica*, Italy, anno LXXVII, 2, 133-148, ISSN 1973-2201.
36. Linu, M.N. and Sunoj, S.M. (2017): Some properties of residual  $R$ -norm entropy and divergence measures, *Calcutta Statistical Association Bulletin*, India, 69(2), 1-17, DOI: 10.1177/0008068317733836, ISSN 0008-0683.
37. Sunoj, S.M., Sankaran, P.G. and Nair, N.U. (2017): Quantile-based reliability aspects of Renyi's information divergence, *Journal of the Indian Society for Probability and Statistics*, India, 18, 267-280, ISSN 2364-9569, DOI 10.1007/s41096-017-0028-6.
38. Sunoj, S.M. and Sreejith, T.B. (2017): Some properties of reciprocal coordinate subtangent in the context of stochastic modeling, *Journal of the Indian Statistical Association*, 55(1), 63-82, ISSN 0537-2585.
39. Sunoj, S.M. and Vipin, N. (2018): On conditional lower partial moments and its applications, *American Journal of Mathematical and Management Sciences*, USA, 37(1), 14-32, DOI:10.1080/01966324.2017.1372234, ISSN 0196-6324.
40. Sunoj, S.M., Sankaran, P.G. and Nair, N.U. (2018): Quantile-based cumulative Kullback-Leibler divergence, *Statistics*, Germany, 52(1), 1-17, ISSN 0233-1888, DOI: 10.1080/02331888.2017.1327534 (Impact Factor: 0.53).
41. Sunoj, S.M. and Rasin, R.S. (2018): A quantile-based study on ageing intensity function, *Communications in Statistics - Theory and Methods*, USA, 47(22), 5474-5484, DOI: 10.1080/03610926.2017.1395049, ISSN 0361-0926 (Impact Factor: 0.470).
42. Sunoj, S.M., Aswathy S. Krishnan and Sankaran, P.G. (2018): A quantile-based study of cumulative residual Tsallis entropy measures, *Physica A: Statistical Mechanics and its Applications*, USA, 494, 410-421, ISSN 0378-4371 (Impact Factor: 2.243).
43. Nair, N.U., Sankaran, P.G. and Sunoj, S.M. (2018): Proportional Hazards Model with quantile function, *Communications in Statistics - Theory and Methods*, USA, 47(19), 4710-4723, DOI:10.1080/03610926.2018.1445858, ISSN 0361-0926 (Impact Factor: 0.470).
44. Sreejith, T.B., Sunoj, S.M. and Rajesh, G. (2018): Nonparametric estimation of Reciprocal coordinate subtangent for right censored dependent scheme, *Communications in Statistics -Theory and Methods*, USA, 48(13), 3177-3190, ISSN 03610926, DOI:10.1080/03610926.2018.1473610 (Impact Factor: 0.470).

45. Kayal, S., Sunoj, S. M. and Vineshkumar, B. (2018): Quantile-based reliability measures in the reversed time scale and some stochastic orderings, *Calcutta Statistical Association Bulletin*, India, 70(2), 136-154, ISSN 0008-0683.
46. Nair, N.U., Sankaran, P.G. and Sunoj, S.M. (2019): Reliability aspects of proportional mean residual model using quantile functions, *REVSTAT-Statistical Journal*, Portugal, 17(4), 1-18 (Impact Factor: 1.4).
47. Nair, N.U., Sankaran, P.G. and Sunoj, S.M. (2019): Some properties of proportional reversed hazards model based on quantile functions, *International Journal of Reliability, Quality and Safety Engineering*, Singapore, 26(3), 1950011, ISSN 0218-5393, DOI: 10.1142/S0218539319500116.
48. Aswathy S. Krishnan, Sunoj, S.M. and Sankaran, P.G. (2019): Quantile-based reliability aspects of cumulative Tsallis entropy in past lifetime, *Metrika*, Germany, 82, 17-38, ISSN 0026-1335, DOI:10.1007/s00184-018-0678-8 (Impact Factor: 0.948).
49. Rajesh, G. and Sunoj, S.M. (2019): Some properties of cumulative Tsallis entropy of order  $\alpha$ , *Statistical Papers*, Germany, 60, 583-593, ISSN: 0932-5026, DOI: 10.1007/s00362-016-0855-7 (Impact Factor: 0.781).
50. Nair N.U., Sunoj, S.M. and Rajesh, G. (2019): Some new results on residual entropy, *Journal of the Indian Society for Probability and Statistics*, India, 20, 185-199, ISSN 23649569, DOI:10.1007/s41096-019-00067-6.
51. Kayal, S., Moharana, R. and Sunoj, S.M. (2020): Quantile-based study of (dynamic) inaccuracy measures, *Probability in the Engineering and Informational Sciences*, USA, 34(2), 183-199, DOI:10.1017/S0269964819000019, ISSN 0269-9648 (Impact Factor: 0.803).
52. Aswathy S. Krishnan, Sunoj, S.M. and Nair, N.U. (2020): Some reliability properties of extropy for residual and past lifetime random variables, *Journal of the Korean Statistical Society*, Korea, 49, 457-474, DOI:10.1007/s42952-019-00023-x, ISSN 1226-3192 (Impact Factor: 0.734).
53. Nair, N.U., Sunoj, S.M. and Vipin, N. (2020): On characterizations of some bivariate continuous distributions by properties of higher-degree bivariate stop-loss transforms, *Communications in Statistics – Theory and Methods*, USA, 49(2), 103-420, DOI: 10.1080/03610926.2018.1543768, ISSN 0361-0926 (Impact Factor: 0.470).
54. Sunoj, S.M., Nair, N.U., Nanda, A.K. and Rasin, R.S. (2020): Ageing intensity function for conditionally specified models, *American Journal of Mathematical and Management Sciences*, USA, 39(4), 329-344, ISSN 0196-6324, DOI: 10.1080/01966324.2020.1762143.
55. David Chris Raju, Sunoj, S.M. and Rajesh.G. (2020): Some properties of Bivariate Cumulative Tsallis Entropy, *Journal of Statistical Theory and Practice*, 14 (63), DOI: 10.1007/s42519-020-00129-0, ISSN 1559-8608 (Impact Factor: 0.296).
56. Aswin, I.C., Sankaran, P.G. and Sunoj, S.M. (2020): A Class of Distributions with Quadratic Hazard Quantile Function, *Journal of the Indian Society for Probability and Statistics*, India, 21, 409-426, DOI: 10.1007/s41096-020-00088-6, ISSN 2364-9569.

57. Rajesh, G., Sunoj, S.M. and Sankaran, P.G. (2020): Some reliability aspects of information volatility function, *Statistica*, Italy, LXXX (3), 233-243, ISSN 1973-2201.
58. Aswathy S. Krishnan, Sunoj, S.M. and Sankaran, P.G. (2020): Some reliability properties of extropy and its related measures using quantile function, *Statistica*, Italy, LXXX (4), 413-437, ISSN 1973-2201.
59. Vipin, N. and Sunoj, S.M. (2021): On some properties of copula-based partial moments, *International Journal of Reliability, Quality and Safety Engineering*, Singapore, 28(1), 2150004, ISSN 0218-5393, DOI: 10.1142/S0218539321500042.
60. Nair N.U., Sunoj, S.M. and Rajesh, G. (2021): Some aspects of reversed hazard rate and past entropy, *Communications in Statistics – Theory and Methods*, USA, 50(9), 2106-2116, DOI: 10.1080/03610926.2019.1659970, ISSN 0361-0926 (Impact Factor: 0.470).
61. Silpa Subhash, Sunoj, S.M., Sankaran, P.G. and Rajesh.G. (2021): Nonparametric estimation of quantile-based entropy function, *Communications in Statistics-Simulation and Computation*, USA, 52(5), 1805-1821, ISSN 0361-0918, DOI: 10.1080/03610918.2021.1890773 (Impact Factor: 0.651).
62. Richu Rajesh, Rajesh, G. and Sunoj, S.M. (2021): Estimation of Shannon entropy in presence of length-bias and type I censoring, *American Journal of Mathematical and Management Sciences*, USA, ISSN 0196-6324, 41(2), 160-169, DOI: 10.1080/01966324.2021.1941452.
63. Rajesh, G., Richu Rajesh and Sunoj, S.M. (2021): Kernel estimation of entropy function for length-biased censored data, *Journal of the Indian Society for Probability and Statistics*, India, ISSN 2364-9569, 22, 251-263, DOI: 10.1007/s41096-021-00103-4.
64. Rajesh, G., Sunoj, S.M. and Richu Rajesh (2022): Kernel estimation of entropy function under length-biased sampling, *Communications in Statistics – Theory and Methods*, USA, 51(24), 8684-8693, DOI: 10.1080/03610926.2021.1904987, ISSN 0361-0926 (Impact Factor: 0.470).
65. Richu Rajesh, Rajesh, G. and Sunoj, S.M. (2022): Kernel estimation of extropy function under length-biased sampling, *Statistics and Probability Letters*, USA, ISSN 0167-7152, 181, 109290, DOI: 10.1016/j.spl.2021.109290 (Impact Factor: 0.87).
66. Silpa Subhash, Nair, N.U., Sunoj, S.M. and Rajesh, G. (2022): Bivariate quantile-based entropy in past lifetime, *Journal of the Indian Society for Probability and Statistics*, India, 23, 187-209, ISSN 2364-9569, DOI: 10.1007/s41096-022-00120-x.
67. Nair, N.U., Silpa Subhash and Sunoj, S.M. (2022): Some new results on Cox-Czanner divergence and their applications in survival studies, *Biometrical Journal*, Germany, 65(3), 2200008, ISSN 1521-4036 (2021 Impact Factor: 1.715), DOI: 10.1002/bimj.202200008.
68. David Chris Raju, Sunoj, S.M. and Rajesh, G. (2022): Cumulative Tsallis entropy under maximum (minimum) ranked set sampling with unequal samples using the quantile function, *Ricerche di Matematica*, Italy, ISSN 0035-5038 (2022 Impact Factor: 1.28), DOI: 10.1007/s11587-022-00739-9.



69. Nair, N.U., Sunoj, S.M. and Rajesh, G. (2022): Some new results on Renyi entropy and its relative measure, *Calcutta Statistical Association Bulletin*, India, 74(2), 97-112, ISSN 0008-0683, DOI: 10.1177/00080683221137197.
70. Nair, N.U., Sunoj, S.M. and Rajesh.G. (2023): Cumulative residual entropy of equilibrium distribution of order  $n$ , *Communications in Statistics – Theory and Methods*, USA, ISSN 0361-0926, 52(3), 851-863, DOI: 10.1080/03610926.2021.1931332 (Impact Factor: 0.470).
71. Aswin, I.C., Sankaran, P.G. and Sunoj, S.M. (2023): The bilinear mean residual quantile function, *Communications in Statistics – Theory and Methods*, USA, 52(19), 7115-7129, ISSN 03610926, DOI: 0.1080/03610926.2022.2042022 (Impact Factor: 0.470).
72. Vipin, N., Ghosh, I. and Sunoj, S.M. (2023). Some properties of stop-loss moments under biased sampling, *Journal of Applied Statistics*, 50(10), 2127-2150, ISSN 0266-4763, (Impact Factor: 1.404), DOI: 10.1080/02664763.2022.2065468.
73. Nair, N.U., Silpa Subhash, Sunoj, S.M. and Rajesh, G. (2023): Bivariate residual entropy function: A quantile approach, *Communications in Statistics – Theory and Methods*, USA, 52(24), 8611-8635, ISSN 0361-0926, DOI: 10.1080/03610926.2022.2067334 (Impact Factor: 0.470).
74. Aswin, I.C., Sankaran, P.G. and Sunoj, S.M. (2023): Reliability aspects of quantile based residual coefficient of variation, *International Journal of Reliability, Quality and Safety Engineering*, Singapore, 30(2), 2250021, ISSN 0218-5393 (2022 Impact Factor: 0.523), DOI: 10.1142/S0218539322500218.
75. Nair, N.U., Sunoj, S.M. and Rajesh, G. (2023): Relation between relative hazard rates and residual divergence with some applications to reliability analysis, *Sankhya A*, India, ISSN 0976-836X, 85, 784-802, DOI: 10.1007/s13171-021-00277-w.
76. Rasin R.S., Sunoj, S.M. and Rakesh Poduval (2023): Kernel-based estimation of Ageing intensity function: Properties and applications, *Austrian Journal of Statistics*, Austria, ISNN1026597X (2022 Impact Factor: 0.775), 52, 16-33, DOI: 10.17713/ajs.v52i5.1497.
77. David Chris Raju, Sunoj, S.M. and Rajesh, G. (2023): Bivariate cumulative Tsallis entropy in past lifetime, *American Journal of Mathematical and Management Sciences*, USA, 42(1), 30-50, ISSN 0196-6324, 42(1), DOI: 10.1080/01966324.2022.2163210.
78. Rajesh, G., Richu Rajesh and Sunoj, S.M. (2023): Non-parametric entropy estimation of conditional distribution under right-censored length-biased sample, *Journal of Statistical Theory and Practice*, USA, 17(25), ISSN 1559-8608, DOI: 10.1007/s42519-023-00326-7 (Impact Factor: 0.76).
79. Nair, N.U., Sunoj, S.M. and Vineshkumar, B. (2023): Bayesian information measures using cumulative residual entropy, *Ricerche di Matematica*, Italy, ISSN 0035-5038 (2022 Impact Factor: 1.28), DOI: 10.1007/s11587-023-00763-3.
80. Nair, N.U. and Sunoj, S.M. (2023): Survival copula entropy and dependence in bivariate distributions, *REVSTAT-Statistical Journal*, Portugal, ISSN 1645-6726 (Impact Factor: 0.9), DOI: 00.00000/revstat.v00i0.000.

81. Nair, N.U., Sunoj, S.M. and Namitha Suresh (2023): Additive hazards quantile model, *Metrika*, ISSN 0026-1335 (Impact Factor: 0.7), DOI: 10.1007/s00184-02300924-2.
82. Namitha Suresh, Sunoj, S.M. and Nair, N.U. (2023): A generalized additive hazards model for the analysis of lifetime data, *Journal of the Indian Society for Probability and Statistics*, India, ISSN 2364-9569 (Impact Factor: 1.2), 24, 623-642.
83. David Chris Raju, Sunoj, S.M. and Rajesh, G. (2024): Results and applications of a new inaccuracy measure based on cumulative Tsallis entropy, *Communications in Statistics – Theory and Methods*, USA, 53(12), 4334-4353, ISSN 0361-0926 (Impact Factor: 0.470), DOI: 10.1080/03610926.2023.2179371.
84. Aswin, I.C., Sankaran, P.G. and Sunoj, S.M. (2024): Some reliability aspects of record values using quantile function, *Communications in Statistics – Theory and Methods*, USA, ISSN 0361-0926 (Impact Factor: 0.470), 53(13), 4755-4775, DOI: 10.1080/03610926.2023.2189499.
85. Sareena Rose, Nickolas, S., Sunoj, S.M. and Sangeetha, S. (2024): A self-learning algorithm for identifying the leverage points in soil data using quantile regression forests, *Decision Analytics Journal*, ISSN: 2772-6622 (Impact Factor: 0.9), 10, 100375, DOI: 10.1016/j.dajour.2023.100375.
86. Silpa Subhash, Sunoj, S.M. and Nair, N.U. (2024): Estimation of Renyi entropy for lifetime uncertainty, *Journal of Statistical Computation and Simulation*, ISSN: 0094-9655, DOI: 10.1080/00949655.2023.2298862 (Impact Factor: 1.4).
87. Rasin. R.S., Sunoj, S.M., and Szymkowiak, M. (2024): Nonparametric estimation of aging intensity function for right censored dependent scheme, *Journal of Statistical Computation and Simulation*, ISSN: 0094-9655, DOI: 10.1080/00949655.2024.2306472 (Impact Factor: 1.4).
88. Saranya, P. and Sunoj, S.M. (2024): On relative cumulative extropy, its residual (past) measures and their applications in estimation and testing, *Journal of the Indian Society for Probability and Statistics*, India, ISSN 2364-9569, DOI: 10.1007/s41096-024-00176-x (Impact Factor: 1.2).
89. Nair, N.U. and Sunoj, S.M. (2024): Inferring Bayesian bivariate ageing from univariate ageing, *Ricerche di Matematica*, Italy, ISSN 0035-5038 (2022 Impact Factor: 1.28), DOI: 10.1007/s11587-024-00854-9.
90. Indaranil Ghosh and Sunoj, S.M. (2024): Copula based mutual information measures and mutual entropy: A brief survey, *Mathematical Methods of Statistics*, Russia, ISSN 1066-5307 (2022 Impact Factor: 0.5) (to appear).
91. Sunoj, S.M. and Saranya, P. (2024): Quantile-based cumulative Kullback-Leibler divergence in past lifetime: Some properties and applications, *Communications in Statistics – Theory and Methods*, USA, ISSN 0361-0926 (Impact Factor: 0.470), DOI: 10.1080/03610926.2024.2352016.
92. Nair, N.U. and Sunoj, S.M. (2024): Ageing Concepts for Bivariate Copulas, Stochastics and Quality Control, Germany, ISSN: 2367-2404 (Impact Factor: 0.473) (to appear).

## **LIST OF SUBMITTED PAPERS**

1. Aswin, I.C., Sankaran, P.G. and Sunoj, S.M.: Nonparametric estimation of quantile-based mean inactivity time function.
2. David Chris Raju, Sunoj, S.M. and Rajesh.G.: Nonparametric estimation of quantile-based cumulative Tsallis entropy function.
3. Nair, N.U. and Sunoj, S.M.: Bivariate Total Time on Test transforms.
4. Nair, N.U. and Sunoj, S.M.: A new bivariate excess wealth transform.
5. Shifna, P.R., Nair, N.U. and Sunoj, S.M.: Multivariate Leimkuhler curve: Properties and applications to analysis of bibliometric data
6. Shifna, P.R., Nair, N.U. and Sunoj, S.M.: A quantile-based bivariate distribution.
7. Namitha Suresh, Sunoj, S.M. and Nair, N.U.: Additive Reversed Hazards Quantile Model: Properties and Applications.
8. Subarna Bhattacharjee, S.M. Sunoj and Sabana Anwar: A new weighted means of failure rates and associated quantile versions.

## **BOOKS**

1. Collected papers of Prof. N.Unnikrishnan Nair (Sankaran, P.G. and Sunoj, S.M. (Edited)), 2007.
2. Reliability Modelling with Information Measures (N.Unnikrishnan Nair, Sunoj, S.M. and Rajesh.G), CRC Press, 2022.

## **TECHNICAL REPORTS**

1. P.G.Sankaran, S.M.Sunoj and Sreedevi Menon: A General Health Profile of Corporation of Cochin, 2003.
2. P.G.Sankaran, S.M.Sunoj and Sreedevi, E.P: A Study on Population Changes in Corporation of Cochin, 2005.

## **PROJECTS UNDERTAKEN**

1. Minor Project: “Characterizations of weighted distributions using form-invariance property and reliability concepts” - Agency: *University Grants Commission*, 2002-2004.
2. Major Project (Asst. Coordinator): “Modelling and analysis of financial time series” - Agency: *Department of Science and Technology*, 2008-2011.
3. Major Project (Assistant Coordinator): “Modelling and Analysis of lifetime data using quantile functions” – Agency: *Kerala State Council for Science, Technology and Environment, Government of Kerala*, 2017-2020.
4. MATRICS Fellowship of Science Engineering and Research Board (SERB), Government of India during January 11, 2021 – January 10, 2024.

## **RESEARCH COLLABORATIONS**

### **International:**

1. Jorge Navarro, Facultad de Matematicas, Universidad de Murcia, 30100 Murcia, Spain.
2. A. Toomaj, Department of Statistics, GonbadKavous University, Gonbad Kavous, Iran.
3. Magdalena Szymkowiak, Institute of Automation and Robotics, Poznan University of Technology, Plac Marii Sklodowskiej-Curie 5, 60965 Poznan, Poland.
4. Indranil Ghosh, Department of Mathematics and Statistics, University of North Carolina, Wilmington, USA.

### **National:**

1. Asok K Nanda, Department of Mathematics and Statistics, Indian Institute of Science Education and Research, Kolkata, P.O. BCKV Campus Main Office, Mohanpur 741252, Nadia, West Bengal, India
2. S. Kayal, Department of Mathematics, National Institute of Technology Rourkela, Rourkela 769008, Odisha, India.
3. Subarna Bhattacharjee, Department of Mathematics, Ravenshaw University, Cuttack-753003, Odisha, India

## **RESEARCH COLLABORATION VISITS**

1. November 23-28, 2017, Indian Institute of Science Education and Research, Kolkata, P.O. BCKV Campus Main Office, Mohanpur 741252, Nadia, West Bengal, India (with Prof.Asok K Nanda).

## **SEMINARS/CONFERENCES ORGANIZED**

1. Organizing Secretary: Annual convention of Indian Society for Probability and Statistics (ISPS) and International Conference on Statistics, Probability and related areas, Department of Statistics, Cochin University of Science and Technology, Cochin, December 19-22, 2011.
2. Coordinator: International workshop on Reliability and Time Series Methodology relevant to Business and Industry, Department of Statistics, Cochin University of Science and Technology, Cochin, January 5-7, 2015.
3. Coordinator: 17<sup>th</sup> National Seminar on Survey Results of NSS 76<sup>th</sup> and 77<sup>th</sup> Rounds, Ministry of Statistics and Programme Implementation during September 1-2, 2022 at Cochin University of Science and Technology.

4. Convenor: International Conference on Statistics, Probability, Data Science and Related Areas (ICSPDS 2023) in conjunction with the 42<sup>nd</sup> Annual Convention of Indian Society for Probability and Statistics (ISPS) during January 4-6, 2023 at Cochin University of Science and Technology.

#### PROFESSIONAL/ACADEMIC/SOCIAL ACTIVITIES

Member: Elected Member, International Statistical Institute, Netherlands since

Senate of the University from the constituency 'Teachers of the University', Cochin University of Science and Technology, 1<sup>st</sup> February 2019 to 31<sup>st</sup> January, 2022.

Syndicate Standing Committee on – Finance & Purchase, Staff & Establishment, Academic Matters.

Faculty of Science, Academic Council, Cochin University of Science and Technology

Board of Studies in Statistics, Cochin University of Science and Technology, Cochin (21-11-2008 to 20-11-2012, 17-11-2017 to 16-11-2021), Board of Studies in Physical and Mathematical Sciences, Cochin University of Science and Technology (28-04-2018 to 27-04-2022), Board of the School of the Mathematics and Computer Science, Central University of Tamilnadu, Board of Studies in Statistics, Christ College (Autonomous), Irinjalakuda, Kerala (25-02-2016 to 24-02-2018), St. Thomas College (Autonomous), Thrissur, Kerala (2016-2018, 2019-2021), Vimala College (Autonomous), Thrissur, Kerala (25-01-2018 to 24-01-2020, 25-09-2020 to 24-09-2022), Sacred Heart College, Thevara, Cochin (11-03-2019 to 15-07-2021).

Internal Quality Assurance Cell (IQAC), 18-08-2017 to 19-08-2019.  
Core Committee of Internal Quality Assurance Cell, 05-01-2019 onwards.

Finance & Infrastructure Committee, Research Development Cell, Cochin University of Science and Technology (29-07-2023 onwards).

Executive Committee, Inter University Centre for Intellectual Property Rights (IUCIPR), Cochin University of Science and Technology (31-07-2023 onwards).

Faculty Selection Committee, Delhi Technological University, New Delhi, February 2018.

Co-ordination committee, Introducing 5 year Integrated M.Sc Courses.

Staff Council, Cochin University of Science and Technology, Cochin (from 25-05-2010 to 24-05-2012).

Committee of Experts, Academic Audit, University of Kerala, November, 2019.

Advisory Committee to Department of Youth Welfare, Cochin University of Science and Technology, February 2015 – August 2015.

Examination Board - Cochin University of Science and Technology, Mangalore University, Bangalore University, University of Kerala, Mahatma Gandhi University, University of Calicut, Kannur University, Kerala Agricultural University, Spices Board, St.Thomas College (Autonomous), Thrissur.

Working committee and Finance, CUSAT Open House, 20-01-2017 and 21-01-2017.

Life member of - International Indian Statistical Association (IISA), Indian Society of Probability and Statistics (ISPS), Kerala Statistical Association (KSA).

Station Consultative Committee at Thrissur, Southern Railways, India (from 1-10-2008 to 30-9-2010).

Session Member, Indian Science Congress, 2011-2012.

Chairman Board of Studies in Physical and Mathematical Sciences, Cochin University of Science and Technology.

Convener Syndicate Standing Committee – Examination Matters, Academic Matters, Cochin University of Science and Technology.

Navakeralam-Yuvakeralam, CM@Campusprogramme in Cochin University of Science and Technology, February 1, 2021.

Hospitality and Department Visits - NAAC Peer Team visit to the University, September 2016.

Academic Bulletin Committee (2018-2019), Cochin University of Science and Technology.

Vice Chairman: Academic Committee, Cochin University of Science and Technology, 30-11-2018 to 20-11-2020.

Co-ordinator: NAAC, Department of Statistics, Cochin University of Science and Technology, Cochin, 2015.

Professional Students Summit 2019, Cochin University of Science and Technology.

Secretary: Department Council, Department of Statistics, Cochin University of Science and Technology, Cochin, 2013-2016.

Cochin University Teachers Association (04-09-2018 to 27-04-2021).

Observer: Kerala State Medical-Engineering Entrance Examination, Common Admission Test (CAT), Cochin University of Science and Technology.

Asst. Coordinator: UGC-CSIR NET Examinations, Cochin

Associate Editor: Journal of Indian Society for Probability and Statistics, Springer, India, February 2021 onwards.

Reviewer: American Mathematical Society, USA

Refereed for: *IEEE Transactions on Reliability*, USA; *Journal of Multivariate Analysis*, USA; *Statistics*, Germany; *Journal of Statistics in Planning and Inference*, USA; *Information Sciences*, USA; *Information Processing Letters*, USA; *Statistics and Probability Letters*, USA; *Statistical Papers*, Germany; *Sankhya*, India; *Communications in Statistics-Theory and Methods*, USA; *Communications in Statistics-Simulation and Computation*, USA; *Journal of Statistical Computation and Simulation*, USA; *Probability in the Engineering and Informational Sciences*, USA; *FILOMAT*, Serbia; *Metrika*, Germany; *Journal of Applied Mathematics and Informatics*, Korea; *RevStat*, Portugal; *Statistica*, Italy; *Colombian Journal of Statistics*, Colombia; *Thailand Statistician*, Thailand; *Quality and Reliability Engineering International*; *Stochastics and Quality Control*, USA; *Revista Colombiana de Estadística*, Colombia; *Journal of Indian Statistical Association*, India; *Indian Journal of Pure and Applied Mathematics*, India; *Aligarh Journal of Statistics*, India; *Journal of Inequalities and Applications*; *International Journal of Information and Coding Theory*; *International Journal of Statistics and Reliability Engineering*, India; *Advances in Mathematical Physics*; *Council of Scientific and Industrial Research*, Government of India; *ProbStat Forum*, India; *Tata McGraw Hill*, India

## CONFERENCES/WORKSHOPS/SYMPOSIUMS PARTICIPATED

1. XVI Annual Conference on Indian Society for Probability and Statistics (ISPS), Osmania University, Hyderabad, India, December 18-21, 1995.
2. International Conference on Quality Improvement through Statistical Methods, (QISM), Cochin, India, December 28-31, 1996.
3. Workshop on QS-9000, Cochin, India, January 1, 1997.
4. National Seminar on Stochastic Systems, Mangalore University, Mangalagangothri, India, February 5-7, 1998.
5. National Seminar on Developments in Statistical Science, Bangalore University, Bangalore, Jnana Bharathi, Bangalore, India, August 12-13, 1998.
6. National Conference on Reliability Analysis, Cochin University of Science and Technology, Cochin, India, December 28-29, 1999.
7. XXII Conference of Indian Society for Probability and Statistics (ISPS), National Seminar on Advances in Statistics and Annual Conference of Indian Bayesians, University of Pune, Pune, India, August 11-14, 2001.
8. One-day workshop on Six Sigma for Quality Improvement, January 21, Cochin, India, 2002.
9. International Conference on Statistics in Industry and Business, Cochin, India, January 2-4, 2003.
10. State level one day Seminar on Applied Statistics organized by the Department of Statistics, St.Thomas College, Thrissur, Kerala on 15 March, 2003.
11. XXIV Annual Conference of Indian Society for Probability and Statistics (ISPS), National Seminar on Recent advances in Statistical Theory and Applications, St.Thomas College, Pala, Kerala, November 4-6, 2004.
12. Two days State Level Seminar on the Emerging Areas in Statistics organized on the Department of Statistics, Sree Kerala Varma College, Thrissur, Kerala during 28-29 January 2005.
13. XXV Conference of Indian Society for Probability and Statistics (ISPS) and Annual Meeting of Indian Bayesian Society, Department of Statistics, Bangalore University, Bangalore, India, December 28-30, 2005.
14. National Seminar on Modelling and Analysis of Lifetime Data, Department of Statistics, Cochin University of Science and Technology, Cochin, India, February 2006, 2006.
15. Two days' workshop on Women and Health Literacy, Department of Statistics, Cochin University of Science and Technology, Cochin, India, July 28-29, 2006.
16. International Conference on Statistics, Probability and related areas, Cochin University of Science and Technology, Cochin, India, January 2-5, 2007.
17. Two days' workshop on Health and Wellness, Department of Statistics, Cochin University of Science and Technology, Cochin, India, November 2007.



18. National Seminar on Statistical Methods and Reliability Analysis, Department of Statistics, Cochin University of Science and Technology, Cochin, India, January 28-30, 2008.
19. XI Annual Conference of the Society of Statistics, Computer and Applications, Department of Statistics, University of Madras, Chennai, India, February 24-26, 2009.
20. Two days' workshop on Statistical Genetics, Department of Statistics, Cochin University of Science and Technology, Cochin, India, December 29-30, 2009.
21. International Conference on Statistics, Probability, Operations Research, Computer Science and Allied areas (VIII International Indian Statistical Association Joint Statistical Meeting and XXIX Annual Convention of Indian Society for Probability and Statistics), Department of Statistics, Andhra University, Visakhapatnam, India, January 4-8, 2010.
22. An invited talk in the ICSSR Sponsored Workshop on Mixed Methods in Social Science Research - A Statistical Approach, Department of Applied Economics, Cochin University of Science and Technology, 26-31, July 2010.
23. Three days' workshop on Reliability Theory and Survival Analysis, Department of Mathematics, IIT Bombay, Mumbai, India, November 25-27, 2010.
24. Two days National Seminar on Mathematics in Folklore organized by Sakthan Thampuran College of Mathematics and School of Folklore Studies, University of Calicut at Thrissur, Kerala during 4-5 January, 2011.
25. National Seminar on Stochastic Modelling, Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala, India, March 24-25, 2011.
26. An invited talk in the State Level Seminar on Experimental Design and Self Similarity, Department of Statistics, Newman College, Thodupuzha on 3<sup>rd</sup> August, 2011.
27. Workshop on Reliability and Survival Analysis, Applied Statistics Unit, Indian Statistical Institute (ISI), Kolkata, November 23-25, 2011.
28. Annual convention of Indian Society for Probability and Statistics (ISPS) and International Conference on Statistics, Probability and related areas, Department of Statistics, Cochin University of Science and Technology, Cochin, December 19-22, 2011.
29. An invited talk in the Indian Science Congress, Mathematical Sciences Session held in Bhubaneswar, January 3-7, 2012.
30. Workshop on Advanced Stochastic models and its applications, Department of Statistics, S.V.University, Tirupathi, India, August 9-10, 2012.
31. An invited talk in the Workshop on Reliability Theory and Survival Analysis, Department of Mathematics and Statistics, Indian Institute of Technology, Kanpur, December 3-5, 2012.
32. A technical talk in the International Conference on Frontiers of Statistics and its Applications in conjunction with XXXII Annual Convention of Indian Society for Probability and Statistics, Department of Statistics, Pondicherry University, December 21-23, 2012.

33. A workshop on Statistical Analysis of Time Series Data with Applications, Department of Statistics, Cochin University of Science and Technology, Cochin 682022, January 14-16, 2013.
34. An invited talk in the National Seminar on 'Modern Statistical Tools in Fisheries', at the School of Industrial Fisheries, Cochin University of Science and Technology, Cochin on 8 March, 2013.
35. An invited talk in the International Seminar on Statistical Research, Department of Statistics, St.Thomas College, Thrissur, Kerala, June 10-11, 2013.
36. An invited talk in the International Conference on Recent Advances in Statistics and their Applications and 33<sup>rd</sup> Annual Convention of Indian Society for Probability and Statistics organized by the Department of Statistics, Dr.Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, India, December 26-28, 2013.
37. International workshop on Reliability Theory and Survival Analysis (IWRS 2013) organized by Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala, India, December 31, 2013 – January 2, 2014.
38. An invited talk in the National Seminar cum workshop on Stochastic Modelling and Emerging Trends in Statistics, Department of Statistics, University of Calicut, March 14-15, 2014.
39. International workshop on Reliability and Time Series Methodology relevant to Business and Industry, Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala, India, January 5-7, 2015.
40. An invited talk in the National Seminar on Recent Trends in Statistical Theory and its Applications, Department of Statistics, St.Thomas College, Thrissur, February 25-26, 2015.
41. Workshop on Official Statistics - Indian context, Centre for Population Studies, Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala, India, 20 October, 2015.
42. An invited talk in the two-day National Seminar on 'Recent Advances of Statistics in Medical Field' organized by the Department of Statistics, Victoria College, Palakkad during 23-24, November 2015.
43. An invited talk in the International Conference on Celebrating Statistical Innovation and Impact in a world of Big and Small Data jointly organized by International Indian Statistical Association and Department of Statistics, Savitribai Phule Pune University, Pune during 20-24, December 2015.
44. A technical talk in the VIII International Symposium on Statistics and Optimization in conjunction with XXXVI Annual Convention of Indian Society for Probability and Statistics and Seminar on Inference, Sampling and Optimization Techniques and Related Areas, Aligarh Muslim University, Aligarh, Uttar Pradesh during December 17-19, 2016.
45. Resource person for UGC-KSCSTE sponsored 'Workshop on Applied Statistical Techniques (AST) organized by the Department of Statistics, Cochin University of Science and Technology during January 19-21, 2017.

46. An invited talk in the National Seminar on Statistical Techniques in Applied Areas, Department of Statistics, St.Thomas College, Thrissur, 27-28 February, 2017.
47. Workshop on Reliability Theory and Survival Analysis organized by Applied Statistics Unit, Indian Statistical Institute, Kolkata during 20-22 November, 2017.
48. Delivered a talk at the Indian Institute of Science Education and Research (IISER), Kolkata during the visit during November 23-28, 2017.
49. An invited talk in the two-day national seminar non 'Statistics: Life and Praxis' sponsored by the Department of Collegiate Education, Government of Kerala and organized by the Department of Statistics, Sree Neelakanta Government Sanskrit College, Pattambi during 11-12, December, 2017.
50. An invited talk in the International Conference on Statistics for Twenty-first Century2017 organized by the Department of Statistics, University of Kerala, Thiruvananthapuram, Kerala, India during 14-16 December, 2017.
51. Workshop on Time-to-events and Time Series Data Analysis using R organized by the Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala, India during 15-18 December, 2017.
52. An invited talk in the 2017 International Indian Statistical Association (IISA) international conference on statistics 'Statistics and Data Science for better life, society and science' held at Hyderabad International Convention Centre (HICC), Kavuri Hills, Hyderabad, India during December 27-30, 2017.
53. An invited talk in the International Conference on Theory and Applications of Statistics and Information Sciences (TASIS 2018) in conjunction with the XXXVII Annual convention of Indian Society for Probability and Statistics (ISPS) held at Bharathiar University, Coimbatore, India during January 5-7, 2018.
54. An invited talk in the National Seminar on Innovative Approaches in Statistics in conjunction with the Annual Conference on the Kerala Statistical Association (KSA) organized by the Department of Statistics, St.Thomas College, Thrissur during February 15-17, 2018.
55. An invited talk in the National Conference on Advances in Statistical Methods organized by the Department of Statistical Sciences, Kannur University, Kerala, India during November 8-10, 2018.
56. An invited talk in the International Conference on Statistics for Twenty-first Century2018 organized by the Department of Statistics, University of Kerala, Thiruvananthapuram, Kerala, India during 13-15 December, 2018.
57. An invited talk in the International Conference on Emerging Innovations in Statistics & Operations Research (EISOR-2018) in conjunction with the XXXVIII Annual convention of Indian Society for Probability and Statistics (ISPS) and 4<sup>th</sup> Convention of Indian Association for Reliability & Statistics held at M.D.University, Rohtak, Haryana, India during December27-30, 2018.
58. A talk in the Special Session on 'Lifetime Data Analysis' in the International Conference on Mathematical Methods in Reliability (MMR2019) held at the City University of Hong Kong, Hong Kong during June 3-7, 2019.

59. A talk in the International Conference on Recent Advances in Statistics and Data Science for Sustainable Development organized by the Department of Statistics, Utkal University, Bhubaneswar, Odisha in conjunction with the Annual Convention of Indian Society for Probability and Statistics during 21-23 December, 2019.
60. Participated in the International Conference on Environmental and Medical Statistics organized by the Department of Statistics and Computer Science, Post Graduate Institute of Science, University of Peradeniya, Sri Lanka during January 9-10, 2020, as part of the India-Sri Lanka Foundation Project between Department of Statistics and Computer Science, University of Peradeniya, Sri Lanka and Department of Statistics, Cochin University of Science and Technology, Cochin, India.
61. An invited talk in the National Seminar on Theoretical and Applied Statistics organized by the Post Graduate and Research Department of Statistics, Farook College (Autonomous), Kozhikode, Kerala during 28-29 January 2020.
62. An invited talk in the National Seminar in Applied Statistics and Symposium on Stochastic Modelling organized by the Post Graduate and Research Department of Statistics, St. Thomas College (Autonomous), Thrissur, Kerala during 4-6 February 2020.
63. An invited talk in the National Seminar on Advanced Developments in Statistical Theory and Applications in conjunction with the 41<sup>st</sup> Annual Conference on Kerala Statistical Association organized by the Department of Statistics, Christ College (Autonomous), Irinjalakuda, Thrissur, Kerala during 26-29 February, 2020.
64. A special invited talk in the Sixth International Conference on Statistics for Twenty First Century – 2020 (ICSTC 2020) organized by the Department of Statistics, University of Kerala, Trivandrum, India during 16-19 December, 2020.
65. Organized a session and given a talk in the International Virtual Conference on Advanced Statistical Techniques in Business and Industry, A Regional Virtual Conference of International Society for Business and Industrial Statistics (ISBIS) in conjunction with Silver Jubilee Anniversary of Department of Statistics, Cochin University of Science and Technology, Cochin 682 022, Kerala, India during 28-30 December, 2020.
66. An invited talk in the National Webinar on the Recent Developments in Statistics and Probability organized by the Department of Statistics, St. Thomas College, Thrissur, Kerala, India during February 18-19, 2021.
67. An invited talk in the National Webinar Series on Recent Developments in Statistical Methods and Applications organized by the Department of Statistics, Christ College, Irinjalakuda, Thrissur, Kerala, India during February 23, 25 and March 1, 3, 5, 2021.
68. An invited talk in the International Virtual Conference-Statistics in the Era of Pandemic (STEP) in conjunction with the 42<sup>nd</sup> Annual Conference of Kerala Statistical Association organized by the Department of Statistics, Nehru Arts and Science and College, Kanhangad, Kerala during 04-06 March, 2021.
69. An invited talk in the International Conference (Virtual Mode) on Emerging Trends in Statistics and Data Science in conjunction with 40<sup>th</sup> Annual Convention of Indian Society for Probability and Statistics (ISPS) jointly organized by Departments of

Statistics of Cochin University of Science and Technology, Cochin, M.D.University, Rohtak, University of Kerala, Trivandrum, Bharathiar University, Coimbatore, The Madura College (Autonomous), Madurai during 7-10 September, 2021.

70. An invited talk in the International Conference on Researchers, Statisticians and Young Statisticians Congress (IRSYSC 2022) organized by the Suleyman Demirel University, Turkey held at Antalya, Turkey during November 3-6, 2022.
71. A special invited talk in the Eighth International Conference on Statistics for Twenty First Century 2022 (ICSTC 2022) organized by the Department of Statistics, University of Kerala, Thiruvananthapuram, Kerala, India during 16-19 December, 2022.
72. An invited talk in the International Conference on Statistical Sciences and Stochastic Modelling (ICSSSM 2023) organized by the Department of Statistics, University of Calicut, Kerala, India during 16-17 February, 2023.
73. An invited talk in the Three-day National Level Workshop on Data Analytics and Predictive Modelling (Sponsored by DBT Star College Scheme, Department of Biotechnology, Ministry of Science and Technology, Government of India) organized by the Post Graduate Department of Statistics, Vimala College (Autonomous), Thrissur, Kerala, India during 9-11 August, 2023.
74. A special invited talk in the ninth International Conference on Statistics for Twenty First Century 2023 (ICSTC 2023) organized by the Department of Statistics, University of Kerala, Thiruvananthapuram, Kerala, India during 17-18 December, 2023.
75. An invited talk in the International Conference on Statistics and Data Science and Annual Conference of Kerala Statistical Association organized by the Department of Statistics, Sree Sankara College, Kalady, Ernakulam District, Kerala, India during 22-24 January, 2024.
76. Talk in the Collaborate Virtual Talk Series between Department of Statistics, Cochin University of Science and Technology, Cochin and School of Public Health, Rutgers University, USA on 27-02-2024.
77. An invited talk in the International Conference on Advances in Data Analytics and Official Statistics, organized by the Department of Statistics, Savitribai Phule Pune University, Pune, India during 24-26 May, 2024.

#### **ACADEMIC EXTENSION ACTIVITIES**

1. An invited talk in the one-day Seminar on 'Statistical Methods' at Nirmala College, Muvattupuzha, Kerala, September 25, 2004.
2. An invited talk in the one-day Seminar on "Applied Statistics" at Sacred Heart College, Thevara, Cochin, Kerala, 3 November 2008.
3. An invited talk for research scholars at School of Marine Sciences, Cochin University of Science and Technology, July 15, 2009.
4. An invited talk in the one-day Seminar at Sree Kerala Varma College, Thrissur, Kerala, August 24, 2009.

5. An invited talk in the UGC sponsored short term course in Research Methodology in Engineering and Quantitative Techniques with Software Applications organized by the Department of Electrical and Electronics, Government Engineering College, Thrissur during 29 November 2010 - 3 December 2010.
6. An invited talk in the one-day seminar organized by the Mathematics Association and Department of Statistics, Christ College, Irinjalakuda, Thrissur, Kerala on 22 January, 2011.
7. An invited talk for Research Scholars, Cochin University of Science and Technology at the Department of Computer Applications, CUSAT, November 2011.
8. An invited talk at Nirmala College, Muvattupuzha on March 27, 2012.
9. An invited talk sponsored by the 'Equal Opportunity Cell, UGC' at the School of Environmental Studies, Cochin University of Science and Technology, Cochin on 22<sup>nd</sup> and 27<sup>th</sup> March, 2013.
10. An invited talk in the Summer School Students Enrichment Programme 'Discovery' organized by Kerala Sasthra Sahithya Parishath, Thrissur on 6 April, 2013.
11. An invited talk in a training programme on 'Big Data Analytics using SPSS' organized by the Department of Business Administration, College of Engineering, Trivandrum, 16 January, 2014.
12. Resource person for UGC sponsored Refresher Course organized by Academic Staff College, University of Kerala, Thiruvananthapuram, Kerala, 4 March, 2014.
13. Resource person for Higher Secondary School Teachers residential training conducted by the Directorate of Higher Secondary Education at Nalanda Auditorium, Kozhikode on 7 August, 2014.
14. Resource person for Higher Secondary School Teachers residential training conducted by the Directorate of Higher Secondary Education at Nalanda Auditorium, Kozhikode on 18 September, 2014.
15. An invited talk in the 'One-day Seminar on Conventional and Innovative Practices in Statistics' organized by Department of Statistics, Nirmala College, Muvattupuzha on October 25, 2014.
16. Prof. Justin George Francis endowment lecture at Department of Statistics, Maharaja's College, Ernakulam on 24 March, 2015.
17. Quiz Master, All Kerala Inter Collegiate Statistics Quiz Competition, organized by Old Students Forum, Department of Statistics, Cochin University of Science and Technology, 18 April, 2015.
18. An invited talk in a training programme on 'SPSS and MS Excel for Engineers and Scientists' sponsored by Directorate of Technical Education, Government of Kerala organized by the Department of Civil Engineering, College of Engineering, Trivandrum, 20 July, 2015.
19. An invited talk in a seminar on 'Statistical Modeling and Applications, Industrial Reliability and Life style modeling' organized by Department of Mathematics and Statistics, Mercy College, Palakkad in association with Old Students Forum, Cochin

University of Science and Technology, Cochin 682 022 held at Mercy College on 29<sup>th</sup> January, 2016.

20. Quiz Master, All Kerala Inter Collegiate Statistics Quiz Competition, organized by Old Students Forum, Department of Statistics, Cochin University of Science and Technology, 19 March, 2016 and 1<sup>st</sup> June, 2017.
21. An invited talk in connection with National Statistics Day organized by the Department of Statistics, Victoria College, Palakkad on 29<sup>th</sup> June, 2017.
22. An invited talk on 'Regression Analysis' in the one-day seminar on 'Applied Statistics' organized by Department of Statistics, St. Mary's College, Thrissur on 26<sup>th</sup> September, 2017 in association with Old Students Forum, Department of Statistics, Cochin University of Science and Technology, Cochin.
23. Delivered a talk on 'Introduction to Multivariate Statistical Techniques' in the Cochin University of Science and Technology Knowledge Forum on 08-11-2017.
24. An invited talk on 'Multivariate Statistical Techniques' in the one-day seminar on 'Applied Statistical Techniques' co-sponsored by Kerala State Council for Science Technology and Environment (KSCSTE) and organized by Department of Mathematics, St. Joseph's College, Irinjalakuda on 30<sup>th</sup> November, 2017 in association with Old Students Forum, Department of Statistics, Cochin University of Science and Technology, Cochin.
25. Resource person in the Special Summer Refresher Course in Mathematical Sciences organized by the UGC-Human Resource Development Centre, Kannur University, Kannur, Kerala, 09-10 March, 2018.
26. Quiz Master, All Kerala Inter Collegiate Statistics Quiz Competition, organized by Old Students Forum, Department of Statistics, Cochin University of Science and Technology, 8 May, 2018.
27. Resource person in the Refresher Course in Statistics organized by the UGC Human Resource Development Centre (Academic Staff College), University of Kerala, Thiruvananthapuram, Kerala, 1<sup>st</sup> June, 2018.
28. Resource person in the one-day workshop 'STAT-2018' organized by the Department of Economics and Statistics (Thrissur), Government of Kerala at Ramanilayam, Thrissur on 7<sup>th</sup> December, 2018.
29. Keynote Speaker at 'Stat Fest 2019' in connection with 13<sup>th</sup> National Statistics Day organized by the Department of Economics and Statistics, Government of Kerala, Thrissur at Jawahar Bala Bhavan on 27<sup>th</sup> June, 2019.
30. Talk on 'Statistics for Economics' to Higher Secondary Teachers Training programme organized by Centre for Budget Studies, CUSAT, 2<sup>nd</sup> September, 2019.
31. Resource person and inauguration of National Science Day celebration at Sree Neelakanta Government Sanskrit College, Pattambi, Kerala, India on 28 February, 2022.
32. Resource person in the Faculty Development Programme (FDP) on Mathematical and Statistical Techniques in Engineering and Management Sciences organized by the Department of Basic Science and Humanities, Jyothi Engineering College,

Cheruthuruthy, Thrissur and sponsored by APJ Abdul Kalam Technology University from 13<sup>th</sup> February to 17<sup>th</sup> February 2023.

33. Chief Guest and speaker for the inauguration of statistics association, Department of Statistics, Christ College, Irinjalakuda, Kerala, India on 5<sup>th</sup> January, 2024.
34. An invited talk in the residential training programme for Higher Secondary School Teachers sponsored by the Government of Kerala and organized by the Department of Computer Applications, Cochin University of Science and Technology on 22-02-2024.
35. Resource person in the Refresher Course in the Applied Mathematics and Statistics organized by the Malaviya Mission Teachers Training Centre, Kannur University, Kerala on 23-02-2024.
36. An invited talk as part of the National Science Day 2024 organized by the Department of Statistical Science, Kannur University on 28 February 2024.

#### **REFRESHER/ORIENTATION COURSES ATTENDED**

1. UGC Sponsored Orientation Course held at Academic Staff College, University of Calicut from 15-07-2000 to 11-08-2000.
2. UGC Sponsored Refresher Course held at Department of Statistics, Cochin University of Science and Technology, Cochin 682 022 from 25-11-2004 to 16-12-2004.
3. UGC Sponsored Refresher Course held at Academic Staff College, University of Calicut from 04-01-2007 to 24-01-2007.

#### **COURSES TAUGHT**

- Probability Theory
- Mathematical Methods for Statistics
- Probability Distributions
- Sampling Theory and Methods
- Computer Programming in C
- Applied Statistics
- Multivariate Analysis
- Applied Regression Analysis
- Survival Analysis
- Operations Research
- Design and Analysis of Experiments
- Reliability and Life Testing
- Industrial Experimental Design
- Applied Multivariate Statistical Analysis
- Practical using SPSS, SAS/R



**RESIDENCE**

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