CURRICULUM VITAE

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ACADEMIC QUALIFICATIONS

B.Sc, SDM College, Ujire (Mangalore University), 1984.

M.Sc (Statistics), Mangalore University, 1986, First Rank.

M.Phil (Statistics), University of Poona, 1989, A grade

Ph.D. University of Poona, 1992.
Thesis title: Some Statistical and Inferential Problems Related to non-Gaussian Time Series.

PROFESSIONAL POSITIONS

- Lecturer in Statistics, Mangalore University, June 1986- June 1987
- Junior Research Fellow, Department of Statistics, University of Poona, June 1987 - June 1989.
- Senior Research Fellow, Department of Statistics, University of Poona, June 1989 - November 1991.
- Lecturer in Statistics, University of Poona, 16, November 1991- 16, April 1992
- Lecturer in Statistics, Cochin University of Science & Technology, 18, April 1992 – 15 November 1996.
- Senior Lecturer in Statistics, Cochin University of Science & Technology, 16, November 1996 – 15 November 2000.
- Reader in Statistics, Cochin University of Science & Technology, 16 November 2000 – 3rd November 2006.
- Professor of Statistics, Cochin University of Science & Technology, 4th November 2006 – 17th July 2018
- Senior Professor of Statistics, Cochin University of Science & Technology, 18th July 2018 - 31st May 2023.
- Dean, Faculty of Science, CUSAT, 8th June, 2022 - 16th September 2023.
- Visiting Faculty, Department of Mathematics & Statistics, Indian Institute of Technology Tirupati, 31st July 2023 - 16th August 2024
- Professor, Department of Mathematics & Statistics, Indian Institute of Technology Tirupati, from 16th August 2024 onwards.

VISITING POSITIONS ABROAD

- Visiting Lecturer, University of Waterloo, Canada, 16 April - 16 June 1998
- Visiting Lecturer, University of Waterloo, Canada, 15 July - 10 September, 1999
- Visiting Lecturer, University of Waterloo, Canada, 01 May - 25 June, 2001.
- Visiting Scientist, University of Birmingham, England, 8 May - 7 June, 2002.
- Visiting Scientist, Technical University Dresden, Germany, January 2003- April 2004.
- Visiting Professor, University of Waterloo, Canada, 4 May - 29 June 2006
- Visiting Professor, University of Waterloo, Canada, 05 June - 12 July 2009
- Visiting Professor, Michigan State University, 16 August 2015- 8 May 2016.
- Visiting Professor, University of Waterloo, Canada, 01-24 June, 2018
- Visiting Professor, University of Waterloo, Canada, 12 September - 29 November 2019.
- Visiting Professor, University of Helsinki, Finland, 13 - 27, August, 2022.
- Visiting Professor, University of Waterloo, Canada, 21 June - 19 July 2023.

HONORS AND FELLOWSHIPS

1. An Elected Member of the International Statistical Institute since January, 2006.
2. Commonwealth Fellowship ,University of Birmingham, UK, 1999 – 2000. It is a fellowship sponsored by the University Grants Commission, New Delhi and the Association of Commonwealth Universities, London.
3. I was one of the three former Commonwealth Fellows from South India selected by the British Council, Chennai for " Travel grant for Commonwealth Scholars Networking". Under this scheme Prof. A. J. Lawrance from University of Warwick visited me at CUSAT for two weeks in March – April, 2006 to continue our research collaboration.
4. UKIERI (UK India Education and Research Initiatives) – Fellowship at the University of Warwick, England from May 1st, 2007 to 31st July 2007. During this period, visited the University of Manchester for two weeks.
5. Distinguished Statistician Award for the year 2018 by the Indian Society for Probability and Statistics.
6. Selected for participating in the Academic Leadership Development Programme under LEAP. Attended the first phase at NIEPA , New Delhi during 13-22, March 2020. The second phase is scheduled to be help at Harvard Graduate School of Education, USA.
7. Fellow of Indian Society for Probability and Statistics, February 2024.

ADMINISTRATIVE POSITIONS

1. Head, Department of Statistics, Cochin University of Science & Technology, March 2008-February 2011.
2. Coordinator, RUSA, August 2018 – January 2020
3. Director, International Relations, CUSAT, From February 2020 to December 2022.
4. Member of the Syndicate, CUSAT from 22nd March 2023 16th September 2023.

COURSES TAUGHT

Probability Theory, Stochastic processes, Applied Regression analysis, Operations Research, Linear models, Mathematical methods, Sampling theory, Mathematical finance, Time series analysis, Statistical forecasting, Probability and Statistics for Engineers, Lifetime data analysis, Multivariate Statistical Analysis.

AREAS OF RESEARCH

Linear and non-linear Time Series Analysis, Financial time series, Modeling of Stochastic Volatility, Analysis of Repairable systems, Chaotic time series.

M.Phil DISSERTATIONS SUPERVISED

(Name of the Scholar, Title of the dissertation, month & Year of award:)

1. Praveen Mani: On Pareto and Logistic Processes, December, 1994
2. Leela Devi:Sequential Estimation of a two-Parameter Exponential Family, Dec. 1994.
3. Krishna Rani: Minification Processes, January, 1996
4. Smitha: Bivariate Exponential and Geometric ARMA Models, January, 1996
5. Shajahan: On measures of System Availability, February, 1997
6. Mariamma Antony: Max-stable distributions January, 1998
7. Abdul Sathar: On autoregressive conditional Heteroscedastic models, February, 1999
8. Jessy: Mixture ARMA models for time series, March 2001
9. Heera: Nonparametric Estimation of renewal functions, March 2001

Ph.D THESIS SUPERVISED

(Name of the Scholar, Title of the thesis, and month and Year of award:)

1. Jacob, T.M.: Sequential Estimation for Some Markovian Models, June 1999.
2. Nampoothiri, C.K.: Modeling and Analysis Of some Time Series, August 2001
3. Hareesh, G.: Modelling and Analysis of heavy tailed time series, May 2011.
4. Angel Mathew : Estimation of Availability of Repairable systems, September 2011
5. Shiji, K.: Analysis of stochastic volatility sequences generated by product autoregressive models, September 2014.
6. Rahul, T.: Applications of non-Gaussian time series in modeling volatility and durations, October 2017.
7. Joshy, C. G. : A study on applications of regression models in Fisheries technology, September 2018.
8. Sri Ranganath, C. G. : Modeling and analysis of financial time series using some non-Gaussian models, February 2019.
9. Nimitha John : Bivariate Co-integrating Time Series with non-Gaussian errors, Jan. 2019.
10. Muhammed Anvar, P., Some contributions to estimation and diagnostic methods for time series analysis, July 2020.
11. Himanshu Pokhriyal, Modelling Time Series in the Presence of Measurement Errors, June 2023.

DOCTORAL THESIS UNDER SUPERVISION:

1. Hariprasad, E. :Time series Forecasting.
2. Divya, K. : Modeling of Count time series.
3. Rhea Davis : Wavelet methods in Time series.

RESEARCH PROJECTS

1. Coordinator, UGC-DRS level II for the Department of Statistics, CUSAT , April 2010 – March 2015. Total grant : INR 44 lahks
2. Coordinator, UGC-DRS level III for the Department of Statistics, CUSAT during April 2016 – March 2021. Total grant : INR: INR 32 lakh + Salary for one Project Fellow.
3. Principal Investigator of a research project "Modelling and Analysis of Financial time Series" worth Rupees 19 lakhs sponsored by the Department of Science and Technology, Government of India. From January 2009 to January 2012.
4. Principal Investigator of DST-SERB sponsored major research project "Stochastic Modeling of non-linear Time Series" worth Rupees 13.2 lakhs from October 2014 to October 2017.
5. Principal Investigator of the project on Stochastic modeling of non-negative time series under MATRICS scheme of SERB, from 22 March 2019 to 21 March 2022. (Rupees 6,60,000).

SEMINARS/ WORKSHOPS COORDINATED:

1. Program coordinator for the International conferences held at CUSAT during December 1996, January 2003, January 2007 and December 2011.
2. Coordinated a National Seminar on Statistical Methods and Reliability Analysis in CUSAT during 28-30, January 2008.
3. Convener of the Workshop on Statistical Analysis of Time Series Data with Applications 14 – 16, January 2013.
4. Convener, International workshop on Time to event and Time series analysis, 15 – 18, December 2017.
5. Convener, International Virtual Conference on Advanced Statistical Techniques in Business and Industry, A Regional Virtual Conference of International Society for Business and Industrial Statistics (ISBIS) at CUSAT, 28-30, December 2020.
6. Convener, International Conference (Virtual Mode) on Emerging trends in Statistics and Data Science in conjunction with 40th Annual Convention of Indian Society for Probability and Statistics (ISPS), 7-10, September 2021.

MEMBER OF ACADEMIC BODIES:

1. A member of the Board of Examiners of CUSAT, University of Calicut, Kerala University, Mangalore University, Bangalore University and Mysore University.
2. A member of the Board of Studies in Statistics of CUSAT, Calicut University, Pondicherry University, Kannur Univ., Kerala University, Mangalore University, Mysore University.
3. A member of the Senate, CUSAT, from 1999 to 2003.
4. Member of the Faculty of Mathematical Sciences, Delhi University, December 2014 – December 2016.
5. Member of the Research Council, Kerala School of Mathematics from August 2017 to August 2020 and from October 2021 to October 2024.
6. Member, Quinquennial Review Team, ICAR-IASRI, New Delhi, 2018 -2019.

MEMBER OF PROFESSIONAL SOCIETIES:

1. Life member of the Indian Society for Probability and Statistics.
2. Life member of the Kerala Statistical Association.
3. Life member, Indian Statistical Association
4. Life member , Indian Science Congress Association.
5. Life member, International Indian statistical Association.
6. A member of the International Society for Business and Industrial Statistics of the ISI.

POSITIONS IN PROFESSIONAL SOCIETIES:

1. An Executive Committee member of the Association of British Scholars, Kochi Chapter, 2007-2009 and 2009 - 2011.
2. Executive Committee member of the Indian Society for Probability and Statistics during 2007- 2012.
3. President, Kerala Statistical Association, January 2012 – February 2016.
4. Treasures, International Indian Statistical Association, India Chapter. January 2010 – December 2015.
5. Vice President, Indian Society for Probability and Statistics, 2017 –2018
6. Member of the governing council, Indian Statistical Association.
7. Council Member, International Society for Business and Industrial Statistics of the ISI, 2011-2012 and 2015 - 2017.
8. President, Indian Society for Probability and Statistics (ISPS): January 2021 - December 2022.

EDITORIAL ACTIVITIES:

1. Associate Editor, Communications in Statistics –Theory and Methods, since 2010. https://www.tandfonline.com/action/journalInformation?show=editorialBoard & journalCode=lsta20

2. Associate Editor, Communications in Statistics – Simulation & Computations, since 2010. https://www.tandfonline.com/action/journalInformation?show=editorialBoard&journalCode=lssp20

3. Associate Editor, Communications in Statistics – Data Analysis, since 2015. https://www.tandfonline.com/action/journalInformation?show=editorialBoard&journalCode=ucas20

4. Associate Editor, Journal of Indian Society for Probability and Statistics, since 2011. https://www.springer.com/journal/41096/editors

5. Associate Editor, Scandinavian Journal of Statistics, since January 2024.

6. Editor of the News Letter, International Society for Business and Industrial Statistics (January 2011 – December 2013).

7. Reviewer for American Mathematical Review.

8. Serving as referee for the Journals: Statistics and Probability Letters, Communications in Statistics, Journal of Indian Statistical Association, TEST, Journal of Applied Statistics, Environmental and Ecological Statistics, Journal of Indian Society for Agricultural Statistics, Journal of Statistical Theory and Practice. Open Journal of Statistics, Statistical Papers.

9. One of the two Chief Editors, Journal of Indian Statistical Association. From January 2019 to December 2021. https://sites.google.com/site/indianstatisticalassociation/journal/editorial-board

10. Executive Editor, Statistical Methods, An International Journal published from CUSAT, From April 2004 to December 2006.

OTHER EXTENSION ACTIVITIES:

1. Chairman, Board of Studies in Statistics, CUSAT , 2017 - 2021.

2. CUSAT NODAL OFFICER for all India Survey on Higher Education, a project of Ministry of Human Resource Development, Government of India, July 2011 – July 2015.

3. Member of CAT monitoring Committee, 2016 -

4. Member, RUSA governing Council, 2017 – 18.

5. Chief Returning Officer, Election for Students Council 2017-2018.

6. Co-Ordinator of Virtual Research Center for faculty of Science, 2018- 19.

7. UGC nominee in the Advisory Committee of the SAP DRS in Statistics, Bharathiar University, Coimbatore, 2016 – 2021.

8. UGC nominee in the Advisory Committee of the SAP DRS in Statistics, Osmania University, Hyderabad, 2018 – 2023.

PUBLICATIONS:

I. BOOK:

- N. Balakrishna (2021). NON-GAUSSIAN AUTOREGRESSIVE-TYPE TIME SERIES. Springer Nature, Singapore. eBook: ISBN 978-981-16-8162-2. Hardcover: ISBN 978-981-16-8161-5.

II. TECHNICAL REPORTS AND CHAPTERS IN EDITED VOLUMES.

1. B. Abraham and N. Balakrishna (1998). Estimation of Availability for a bivariate exponential autoregressive process. Research Report No.RR- 98-05,IIQP, University of Waterloo, Canada, 1998
2. N. Balakrishna (1998). Estimation in a bivariate geometric distribution. In Statistical Methods for quality and reliability, 86-92, 1998, Editors: N. Unnikrishnan Nair and P.G.Sankaran.
3. B. Abraham and N. Balakrishna (1999). Variogram and the Declaration of Stationarity. IIQP Research Report RR-99-09, University of Waterloo.
4. A. J. Lawrance and N. Balakrishna (2000). Negative dependency in statistical behaviour of chaotic maps. Proceedings of International Symposium on Nonlinear Theory and Its Applications, TU Dresden, Germany, 393-396.
5. B. Abraham and N. Balakrishna (2003). Time Series in Business and Industry In Hand Book of Statistics, Edited by C.R.Rao and R.Khatree. Chapter 29, 1055-1106. Elsevier Science B.V.
6. Shalabh, Dhar, S. S. and Balakrishna, N. (2020). "Goodness of Fit in Parametric and Nonparametric Econometric Models" . A Chapter in Edited book entitled Optimal Decision Making in Operations Research & Statistics: Methodologies and Applications. Editors: Ali, I., Cardenas-Barron, Ahmed, A. and Shaik, A. A. Published by Taylor's Francis, CRC Publishers. ISBN-10: 0367618753; ISBN-13: 978-0367618759.
7. Fuxia Cheng, Hira L. Koul, Nao Mimoto and Narayana Balakrishna (2022). An analog of the Bickel-Rosenblatt test for error density in the linear regression model. Edited volume in honor of Prof. Masanobu Taniguchi.

III. ARTICLES PUBLISHED IN PEER REVIEWED JOURNALS.

1. S. R. Adke and N. Balakrishna (1992). Renewal counting Process induced by a discrete Markov chain. *Australian Journal of Statistics, 34, 115-121.*
2. S. R. Adke and N. Balakrishna (1992). Estimation of the mean of some stationary Markov sequences, *Communications in Statistics – Theory & Methods, 21, 137-159.*
3. S. R. Adke and N. Balakrishna (1992). Markovian Chi-square and Gamma processes. *Statistics & Probability Letters, 15, 349-356.*
4. N. Balakrishna and N. Unnikrishnan Nair (1995). Characterizations of Moran's bivariate exponential model by geometric compounding, *Journal of Indian Society for Probability and Statistics, 3, 17-26.*

5. N. Balakrishna and K. Jayakumar (1996). Bivariate autoregressive minification processes. *Journal of Applied Statistical Sciences, 5, 129-14.*
6. N. Balakrishna and K. Jayakumar (1997). Bivariate semi-Pareto distributions and processes, *Statistical papers, 38, 149-165.*
7. N. Balakrishna and T. M. Jacob (1998). Sequential Estimation of the autoregressive parameter in a first order random coefficient AR process, *Far East Journal of Theoretical statistics, 1, 1-14.*
8. N. Balakrishna and T. M. Jacob (1998). Sequential estimation of the mean of a first order random coefficient autoregressive process. *Journal of Indian Statistical Association, 36, 141-155, 1998.*
9. N. Balakrishna (1998). Estimation for semi-Pareto processes. *Communications in Statistics – Theory & Methods, 27, 9, 2307-2323, 1998.*
10. B. Abraham and N. Balakrishna (1999). Inverse Gaussian autoregressive models. *Journal of Time Series Analysis, 20, 6, 605-618.*
11. . N. Balakrishna (1999). Non-Gaussian Time Series: A Review, *Stati. Meth, 1, 83-95.*
12. C. K. Nampoothiri and N. Balakrishna (1999). Threshold autoregressive model for a time series data. *Jour. of Indian Soc. for Agri. Stat., 53(2), 151-160.*
13. B. Abraham and N. Balakrishna (2000). Estimation of Limiting availability for a stationary bivariate process, *Journal of Applied Probability, 37,696-704.*
14. A. J. Lawrance and N. Balakrishna (2001). Statistical Aspects of Chaotic Maps with Negative Dependency in a Communications Setting, *Journal of Royal Statistical Society, Series B, 63, 843-853.*
15. N. Balakrishna and T. M. Jacob (2003). Parameter estimation in Minification processes, *Communications in Statistics, Theory & Methods, 32(11), 2139-2152.*
16. N. Balakrishna and C. K. Nampoothiri (2003). Cauchy Autoregressive process and its Applications, *Jour. Ind. Statist. Ass., 41(2), 143-156.*
17. B. Abraham, N. Balakrishna and R. Sivakumar (2006). Gamma Stochastic Volatility models, *Journal of Forecasting, 25, 153-171.*
18. A. J. Lawrance and N. Balakrishna (2008). Statistical Effects from Discretizing Chaos, *International Journal of Bifurcation and Chaos, 18 (11), 3207 – 3219.*
19. N. Balakrishna and Angel Mathew (2009). Non-parametric estimation of the average availability. *Commun. Staist. -Theory & Meth., 38, 1207-1218.*
20. N. Balakrishna and G. Hareesh (2009). Statistical Signal Extraction Using Stable Processes. *Statistics and Probability Letters, 79, 851 – 856.*
21. N. Balakrishna and K. Shiji (2010). A MarkovianWeibull sequence generated by product autoregressive models and its statistical analysis. *Journal of Indian Society for Probability and Statistics, vol. 12, 53-67.*
22. Bei Chen, Yulia R. Gel, N. Balaklrishna and Bovas Abraham (2011). Computationally Efficient Bootstrap Prediction Intervals for Returns and Volatilities in ARCH and GARCH Processes. *Journal of Forecasting,30, 51-71.*

23. N. Balakrishna and G. Hareesh (2011). Stable Autoregressive Models and Signal Estimation. *Comm. in Statistics – Theory and Methods, 41, 11, 1969 – 1988.*

24. N. Balakrishna and Angel Mathew (2012). Sequential Interval Estimation of the Limiting Interval Availability for a Bivariate Stationary Dependent Sequence. *Statistics, 46(2), 185 – 196.*

25. N. Balakrishna and A. J. Lawrance (2012). Development of Product Autoregressive Models. *Jr. of Indian Statistical Association, Vol.50, page 1-20.*

26. B. Abraham and N. Balakrishna (2012). Product Autoregressive Models for non-negative variables. *Statistics and Probability Letters, Vol. 82, 1530 – 1537.*

27. N. Balakrishna and T. Rahul (2014). Inverse Gaussian Distribution for modelling conditional durations in Finance. *Communications in Statistics, Simulation and Computation,43, 476 – 486.*

28. N. Balakrishna and K. Shiji (2014). Extreme Value Autoregressive Model and its applications. *Journal of Statistical Theory and Practice,8, 460 – 481.*

29. N. Balakrishna and K. Shiji (2014). Stochastic Volatility Models Generated by Gumbel extreme value Autoregressive model. *Journal of Indian Statistical Association, 52, 1, 45-64.*

30. Angel Mathew and N. Balakrishna (2014). Nonparametric Estimation of the Interval Reliability. *Journal of Statistical Theory and Applications, Vol.13,356-366.*

31. N. Balakrishna and K. Shiji (2014). On a class of Bivariate Exponential Distributions. *Statistics and Probability letters, 85, 153 – 160.*

32. N. Balakrishna and C. G. Sri Ranganath (2015). ARMA models with generalized error distributed innovations. *Journal of Indian Statistical association, 53, 11-34.*

33. E. V. Gijo and N. Balakrishna (2016). SARIMA models for Forecasting call volume in Emergency Services.Inter. *Jour. of Business Excellence., Vol.10, N0.4, 545-561.*

34. N. Balakrishna and P. Mohammed Anvar(2017). Estimating function method for product autoregressive models. *Comm. in Statistics – Simula and Comp. Vol. 46, 3962 – 3979.*

35. Bozidar V. Popovic, Miroslav M. Ristic and N. Balakrishna (2017).A mixed stationary autoregressive model with exponential marginals, *Statistical Papers , 58, 1125 – 1148.*

36. Manik Awale, N. Balakrishna and T. V. Ramanathan (2019). Testing the constancy of the thinning parameter in a random coefficient integer autoregressive model. *Statistical Papers, 60, 1515-1539.*

37. Joshy, C. G., Balakrishna, N. and Ravishankar, C. N. (2017). Non-parametric regression estimation of growth rate of India's fish production an export. *Fishery Technology, 54, 128 – 136.*

38. Joshy, C. G. and Balakrishna, N. (2017). Blocking first order response surface designs with interaction under correlated error, *Model Assisted Statistics and Applications 12 179–191.*

39. Balakrishna, N. and Hira L. Koul (2017). Varying Kernel Marginal Density Estimator for a Positive Time Series. *Journal of Nonparametric Statistics, Vol. 29 (3), 531-552, 2017.*

40. Angel Mathew nd N. Balakrishn (2018) . Nonparametric Estimation of the Limiting Interval Reliability for Stationary Dependent Sequences, *Journal of Mathematics and Statistical Science, 45-53.*
41. Nimitha John and Balakrishna, N. (2018). Co-integration models with non Gaussian-GARCH innovations. *METRON, 76(1), 83-98.*
42. Balakrishna, N. and G. Hareesh (2018). Analysis of autoregressive models with symmetric stable innovations, *Statistics, 57(2), 288-302.*
43. Nimitha John and Balakrishna, N. (2018). Unit root and co-integration with logistic innovations, *Jr. of Ind. Society for Agr. Stat. 72(1) 2018 39–48.*
44. T. Rahul, N. Balakrishnan and N. Balakrishna (2018). Time Series with Birnbaum-Saunders Marginal Distributions. *Applied Stochastic Modelling in Business and Industry. 34, 562–581.*
45. Mohammed Anvar, P. and N. Balakrishna (2018). Some Weighted mixed portmanteau tests for diagnostic checking in linear time series models. *Journal of Statistical Computation and Simulation. 88, No. 15, 3000–3017*
46. Joshy, C.G., N Balakrishna, George Ninan and C.N. Ravishankar (2018). Accelerated Shelf Life Prediction Models with Correlated Error for Bio-chemical and Sensory Responses of Chill Stored Fish. *Journal of Indian Society for Agricultural Statistics. 72(2), 129–140.*
47. Joshy, C. G., N Balakrishna and V. R. Madhu (2018). Local polynomial regression estimation of trawl size-sensitivity parameters using genetic algorithm. *Indian Journal of Fisheries. 65(3), 25-32.*
48. Sri Ranganath, C. G. and N. Balakrishna (2019). Bayesian Analysis of Inverse Gaussian Stochastic Conditional Duration Models. *Journal of Statistical Theory and Applications, 18(4), 375-386.*
49. Nimitha John and Balakrishna, N. (2019).Copula based bivariate cointegration model. *Calcutta Statistical Association Bulletin, Vol. 71, 21-39.*
50. N. Balakrishna, H. L. Koul, M. Ossiander and L. Sakhanenko (2019). Fitting a pth order parametric generalized linear autoregressive multiplicative error model. *Sankhya, B.Vol. 81-B, 103-122.*
51. Balakrishna, N. and Rahul, T. (2019). Modelling of Stochastic Volatility using Birnbaum-Saunders Markov sequence. *Statistics and Applications, 17, 105-120.*
52. Mohammed Anvar, P. and N. Balakrishna and B. Abraham (2019). Stochastic volatility generated by product autoregressive models. *Stat, Vol. 8, No. 1.* https://doi.org/10.1002/sta4.232.
53. Pokhriyal, H. and N. Balakrishna (2019). Bootstrap prediction intervals for autoregressive conditional duration models. *Journal of Statistical Computation and Simulation. 89, 2930-2950.*
54. N. Balakrishna , Jiwoong Kim and Hira L. Koul (2020). Lack-of-fit of a parametric measurement error AR(1) model. *Statistics and Probability Letters, Vol. 166.* Online: https://doi.org/10.1016/j.spl.2020.108872.

55. Joshy, C.G., N Balakrishna (2021). Orthogonally blocked second order response surface designs under auto-correlated errors. *Journal of Indian Society for Agricultural Statistics. 75(2), 169–174.*
56. Nimitha John and Balakrishna, N. (2022). Modelling of Cointegration with Student's t-errors. *Journal of Mathematics and Statistics*, 10(1): 233-245. January 2022.
57. Pokhriyal, H. and N.Balakrishna (2023). Testing for measurem- ent error in regression with autoregressive innovations. *Communications in Statistics – Simulation and Computation. Vol. 52, 5, 1834-1848.* https://doi.org/10.1080/03610918.2021.1891430, May 2023.
58. Sujith, P. and Balakrishna, N. (2023). Autoregressive inverse Gaussian process and the stochastic volatility modeling. *Communications in Statistics - Theory and Methods,* Vol. 52, 10, 3574-3580. https://doi.org/10.1080/03610926.2021.1977324, October 2023.
59. Koul, H. L., Perera, I. and Balakrishna, N. (2023). A class of Minimum Distance Estimators in Markovian Multiplicative Error Models. *Sankhya, Series B, Vol. 85, 87-115*, May 2023. https://doi.org/10.1007/s13571-021-00274-x
60. Hariprasad, E. and Balakrishna, N. (2023) Estimating function method for nonnegative autoregressive models, *Accepted in Statistica Neerlandica,March 2023, DOI: 10.1111/stan.12294*
61. Divya Andrews Kuttenchalil and Balakrishna, N. (2023). A novel geometric AR(1) model and its estimation. *Journal of Statistical Computation and Simulation. VOL. 93, NO. 16, 2906–2935 doi.org/10.1080/00949655.2023.2213794*
62. Fuxia Cheng, Hira L. Koul, Nao Mimoto and Narayana Balakrishna (2023). An analog of the Bickel-Rosenblatt test for error density in the linear regression model, *Chapter 11, in Statistical Inference for Time Series and Related Models. Edited volume in honor of Prof. Taniguchi*. August 2023.
63. Balakrishna, N., Mohammed Anvar, P. and Bovas Abraham. (2024). Zero-modified count time series with Markovian intensities. *Journal of Statistical Planning and Inference, Vol.229, March 2024.*
64. Divya Andrews Kuttenchalil and Balakrishna, N. (2024). Coherent forecasting of No-GeAR(1) model. *Accepted in Journal of Indian Society for Probability and Statistics*

CONFERENCES / WORK SHOPS PARTICIPATED ABROAD

1. Attended a Paper presentation session of the Royal Statistical Society in London, October 1999.
2. Attended the 36th Gregynog Statistical Conference in Wales, England, April 2000.
3. Presented a paper on Negatively Dependent Binary Chaos for Communication Modeling in the International Conference of the Royal Statistical Society, University of Reading, England, 25-29, September 2000.
4. Participated in a Workshop on Classification at University of Waterloo, Canada. 20, May, 2001.

5. Presented a paper on stochastic and chaotic shot noise processes in the Seminar on Statistical Aspects of Non-linear systems at Technical University Dresden, Germany, 25-28, September 2003.

6. Participated in a Workshop on Netzwerke in der Gebaudeautomation – Modellierung, Voraussage, Planung. Technical University Dresden, Germany, 27, November 2003.

7. Attended a One day workshop on Six-Sigma held at the University of Waterloo, Canada on 25.05.2006.

8. Presented an Invited talk on Product Autoregressive Time Series Models at an International Workshop on Applied Probability, University de Technologie, Compiegne, France, July 7 – 10, 2008.

9. Presented a paper on "Applications of product models in financial time series" at the 57th session of the International Statistical Institute held at Durban, South Africa, 16 – 22, August 2009.

10. Resource person at an ISBIS sponsored Workshop on Time series analysis in Data Science at University of Peradeniya, Sri Lanka, 20 -22, December 2017.

INVITED COLLOQUIUM TALKS:

1. Visited the Department of Statistics, University of Connecticut, Storrs, USA during 8-11, March 2016 and presented a Colloquium talk on Multiplicative error models for nonnegative time series.
2. .Visited the Department of Mathematics and Statistics, University of Maryland, Baltimore County during 7-8, April 2016 and presented a Colloquium talk on Varying kernel estimation for nonnegative time series.
3. Visited Memorial University, Newfoundland, Canada during 16 – 20, November 2019. Presented a colloquium talk in the Department of Mathematics and Statistics.
4. Department of Statistics, University of Calcutta under the UGC DSA visiting scheme and delivered a series of 2 lectures on Time Series Analysis during 26 – 30, March 2012.
5. Department of Statistics, University of Panjab, under UGC SAP visiting scheme and presented a series of 3 lectures on Financial Time Series Analysis during 24 – 30, November 2013.
6. Engaged Special Lecture Series (10 lectures) on Financial Time Series at the Department of Statistics, Mangalore University under their UGC Innovative program during 21-25, April 2014.
7. Department of Mathematics and Statistics, Indian Institute of Technology, Kanpur to continue research collaboration on Measurement error models and time series, during 6-11, April 2015 and 4- 10, August 2019.
8. School of Mathematics and Statistics, University of Hyderabad to deliver series of 2 lectures on Time series analysis during 5 – 8, September 2017.

CONFERENCES / WORKSHOPS PARTICIPATED IN INDIA

1. Attended a National Seminar on Statistical Inference, Pune, June 1987.
2. Presented a paper on counting processes generated by some Markov sequences at 77th session of Indian Science Congress, Cochin, February 1990.
3. Attended the Annual conference of Indian Soc. for Prob. & Stat, Pune , Dec. 1993.
4. Attended a Workshop on Stochastic Calculus at Mysore, March 1995.
5. Presented a paper on Bivariate alpha-Laplace autoregressive processes at the Annual conference of Indian Soc. for Prob. and Stat, Hyderabad, Dec. 1995.
6. Presented a paper on Estimation for a Bivariate geometric distribution, International Conference on Quality Improvement through Stat. Methods, Cochin Dec. 1996.
7. Presented a paper on Estimation for the semi-Pareto process at a National Seminar on Statistical Inference, Dharwad, November 1997.
8. Presented a paper on Estimation for some non-Gaussian time series at a National Conference on Stochastic Modeling, Mangalore , February 1998.
9. Presented a paper on Estimation for minification processes, International Conference on Stochastic Processes and their Applications, Madras, January 1998.
10. Presented a paper on Positive stable Autoregressive process in the International Conference on Extreme Values and Order Statistics, Mysore, 18-20, December, 2000.
11. Presented a paper on Gamma Stochastic Volatility models at a National Conference held at University of Pune, August 2002.
12. Presented a paper on Applications of chaotic time series in communication modeling at the International conference on Statistics in Industry and Business held at Cochin, January 2003.
13. Presented a paper on 'Estimation of positive stable stochastic volatility models via empirical characteristic function' at the 25th Conference of Indian Society for Probability and Statistics and Annual Meeting of Indian Bayesian Society held during 28 – 30 December 2005, Bangalore University.
14. Attended workshop on Financial Mathematics, January 6, 2007, Cochin.
15. Attended workshop on Women and Health Literacy, Department of Statistics, Cochin University of Science and Technology, Cochin.
16. Presented a paper on "Some models for stochastic volatility" at the International Conference on Statistical Science, OR &IT, XXVIth Annual Conference of ISPS, held during January 7-9, 2007 at Thirupathi.
17. Participated in two day International Workshop on Quantitative Methods for Environmental Data Analysis with Statistical Package R, AIMSCS, Hyderabad, 1-2, January 2012.

INVITED SPEAKER AT NATIONAL / INTERNATIONAL SEMINARS IN INDIA:

1. Estimation of limiting Availability for a bivariate exponential autoregressive process in a Workshop on Reliability Modeling held at Indian Institute of Technology, Bombay, November, 1998.
2. Spectral analysis of stochastic and chaotic shot noise processes at an International conference on Recent developments in Statistics and Probability, University of Pune, December 22-24, 2003.

3. Estimation for non-Gaussian Time series at the Annual Conference of ISPS, St.Thomas College, Palai, 2-4, November 2004.
4. Discrete chaos: Statistical Independence and dependence at the International conference on the future of statistical theory, practice and education, Indian school of business, Hyderabad, December 27 2004- January 2, 2005.
5. Applications of queuing models in Automatic control loops with feedback at the International Conference on Reliability, Statistics and Related Areas, Indian Institute of Management, Calicut, January 6-8, 2005.
6. Statistical effects from discretizing chaos, National Conference on Statistical Inference, University of Pune, January 8 – 10, 2006.
7. Product form of gamma stochastic volatility models at National Seminar on Recent Advances in Statistics & Analysis of Non-Conventional Data, March 15 – 17, 2008, Farook College, Calicut.
8. Some Results in Financial Time Series models at National Seminar on Recent Trends in Statistics, Feb 12 – 14, 2009, Nehru College, Kanhangad.
9. Stochastic volatility processes generated by product autoregressive models at the Annual Conference of International Indian Statistical Association held at Vishakapatnam during 4-8, January 2010.
10. Product Autoregressive Models for non-negative data. National Seminar on New Trends in Applied Statistical Methodology, Feb 25 – 27, 2010, Nirmala College, Muvattupuzha, Kerala.
11. Stochastic Volatility Processes driven by some product autoregressive models. International Conference on Development and Applications of Statistics in emerging areas of Science and Technology, University of Jammu, December 8-10, 2010.
12. Some Bivariate Distributions Evolved From the study of Non- negative time series. International conference on Actuarial statistics, Bio statistics and Stochastic Modeling, Kannur University, January 12-14, 2011.
13. Stochastic volatility process generated by an extreme value autoregressive model. National Conference on Statistics for twenty first century, University of Kerala, March 17 – 19, 2011.
14. Financial Time Series at a Workshop on Statistical Applications in Industry, Business, Agriculture and Ecology, St. Thomas College, Palai, 26 – 28, March 2011.
15. Product autoregressive gamma sequences for modeling stochastic volatility at a National seminar at Bangalore University, 16 – 18, November, 2011.
16. Inverse Gaussian duration models at Indian Science Congress, held at Bhubaneshwar, 3-7, January 2012.
17. Modeling and analysis of financial time series at National Seminar on Stochastic Modeling, March 21-22, 2012, Kannur University.
18. Inverse Gaussian models for conditional durations at a National Seminar on Recent Tends in Statistics and Related Areas, March 15 – 17, 2012. University of Calicut.

19. Resource person at the National Workshop on Mathematical Modelling and Analysis of Financial Data organized by the Department of Statistics, University of Pune, 24 – 29, September 2012.
20. Applications of Stable Autoregressive Models in Signal Processing. International Conference on Optimization, Modeling and Applications, University of Delhi, November 29 – December 1, 2012.
21. Stable Autoregressive Model and its Applications. National Conference on Statistics for Twenty-first century , University of Kerala, 10 – 12, December, 2012.
22. Parameter Estimation in Some Multiplicative Error Time Series Models, ICONFROST-2012 and 32nd Annual conference of Indian Society for Probability and Statistics (ISPS), Pondicherry University, 21 – 23, December 2012.
23. Stochastic Volatility Processes Generated by Product Autoregressive Models, Annual Conference of International Indian Statistical Association held at Chennai, 2- 5, January 2013.
24. Multiplicative Error Models for Financial Time Series, National Conference on Recent Advances in Statistics with Application in Finance and Actuarial Science, 22- 23, February, 2013. Central University of Rajasthan, Kishengarh, Ajmer.
25. On Multiplicative error models for financial time series at National Seminar on Statistical Theory and Applications, 15-16, March 2013. St. Thomas College, Palai.
26. Served as resource person in the UGC sponsored National Seminar on "Advances in Statistical Theory and Computational Applications" at Newman College, Thodupuzha, 29 – 30, August 2013.
27. Resource person in a Workshop on Financial Modeling and Analysis, Department of Management Studies, IIT Chennai, 5-9, November 2013.
28. Delivered a lecture at Central Plantation Crops Research Institute, Kayangulam on Time Series Analysis on the occasion of celebrating International Year of Statistics, December 18, 2013.
29. Organized and Chaired a session on Time Series Analysis in the International Conference on "Recent Advances in Statistics and Their Applications" at Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, December 26-28, 2013.
30. Presented a Key Note Lecture on Modeling of Stochastic Volatility in Financial Time Series at a National Conference on "Recent Advances in Statistics" Osmania University, Hyderabad, 21 – 22, February, 2014.
31. SARIMA models for forecasting emergency telephone calls at National Conference on Statistics for Twenty-first century , University of Kerala, 20– 22, March, 2014.
32. Presented an invited talk on Some bivariate distributions evolved from product autoregressive models at an International conference on Statistics and Information technology for a growing nation at S.V University, Tirupati, 30 Nov.- 2 Dec, 2014.
33. Non-Gaussian time series and stochastic volatility models in finance. National Workshop on Financial Data Analysis, 27-30, December 2014. C R Rao AIMSCS, Hyderabad.
34. Estimation for non-negative time series. National Conference on Recent Advances in Statistics, 2-3, January 2015. University of Pune.

35. Delivered a talk in International Workshop on Reliability and Time Series Methodology Relevant to Business and Industry on "On ARCH and GARCH Models", CUSAT, January 5-7, 2015.
36. Extreme value autoregressive models and its applications at a National Conference on Interdisciplinary realms of Statistics at Sree Kerala Varma College, Thrissure, 9-10, January 2015.
37. Time Series Models for Forecasting at a National Seminar on Applications of Statistics in Research, Planning and Industry, Mount Carmel College, Bangalore, 5-7, February, 2015.
38. Presented an Invited talk on Financial Time Series analysis at a Research Workshop and Conference on Statistical Methods in Finance, Chennai Mathematical Institute, July 13-17, 2015.
39. Participated in MHRD sponsored Workshop on Flexible Statistical Modelling by Prof. Adrian Bowman, University of Glasgow at under the GIAN (Global Initiative for Academic Network) at Mangalore University, 10 – 14, October 2016.
40. Role of time series in option pricing at a National Seminar on Applied Statistics and Quantitative Finance, Government Victoria College, Palakkad, 8-9, December 2016.
41. A kernel density estimator for positive time series at International Conference on Statistical Methods in Finance, Chennai Mathematical Institute, 19 – 22, December 2016.
42. A kernel based regression estimator for positive time series at National Conference on Recent Advances in Statistics and Their Applications to Society. SavitribaiPhule University, Pune during 23 – 25, March 2017.
43. Invited Talk on Statistical Modelling of volatility in Financial time series at the 11th National Statistics Day Conference held at Reserve Bank of India, Mumbai on 4th July 2017.
44. Invited talk on Varying kernel autoregressive function estimator for positive time series at IISA International Conference on Statistics, Hyderabad International Convention Centre, 27 – 30, December 2017.
45. Invited talk on Modeling stochastic volatility using Birnbaum – Saunders Markov sequence at an International Conference on Recent Advances in Statistical Methodology with Applications in Clinical and Official Statistics. St. Thomas College, Palai, 03 - 05, January 2018.
46. Invited talk on Goodness of tests based on varying kernel for a positive time series at International Conference on Theory and Applications of Statistics and Information Sciences, Bharathiar University, Coimbatore, 5-7, January 2018.
47. Resource person for Time series analysis (3 lectures) at a three day workshop-cum-Seminar in Statistics at University of Mysore, 08-10, February 2018.
48. Invited talk on Time series with Birnbaum-Saunders marginal distributions. Fourth international conference on Statistics for twenty first century. University of Kerala, December 13-15, 2018.
49. Invited talk on Applications of B-S distribution in modelling stochastic volatility.at International Conference on Statistical Methods in Finance, Chennai Mathematical Institute, 17 – 19, December 2018.

50. Invited talk on Some non-Gaussian stochastic volatility models, International conference on emerging innovations in Statistics & Operations Research. M.D. University, Rohtak, December 27 – 30, 2018.
51. Invited talk on Analysis of autoregressive models with symmetric stable innovations. International Conference on Computer Age Statistics in an Era of Big and High Dimensional Data. University of Pune, January 3-5, 2019.
52. Invited talk on Autoregressive models with stable errors and its applications. National conference on Recent advances in Statistics and Statistical practice. Sardar Patel University, Anand, Gujarat, 1-2, March, 2019.
53. Invited talk on Analysis of Non-negative Time series using Multiplicative Error Models, National conference on Statistical theory, modelling and applications. Bharathiar University, Coimbatore, 14-15, March 2019.
54. Invited talk on Statistical volatility generated by product autoregressive models in Statfin Conference at Chennai Mathematical Institute, 19-21, 2019.
55. Invited talk on generalized gamma SV model and its applications in Annual Conference of ISPS at Utkal University, Bhuvaneswar, 21-23, December 2019.
56. Invited talk on non-Gaussian models for co-integrating time series in IISA 2019 Conference : innovations in Data and Statistical Sciences. IIT, Mumbai, 27-30, December 2019.
57. Invited talk on Bi-variate Co-integrating time series at National Seminar in Applied Statistics and Symposium in Stochastic modeling, St. Thomas College, Trichur, 4-6, March 2020.
58. Invited talk on Model selection criteria in time series at International Webinar on Advances in Statistics and Data Science for Sustainable Human development, S V University, Tirupati, 7-10, September 2020.
59. Invited talk on Zero inflated count series with Markovian intensities at 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) at CUSAT, 28-30, December 2020.
60. Invited speaker: Visionary Innovations in Statistical Theory and Applications, Online conference by ICAR - National Academy of Agricultural Research Management (ICAR - NAARM), Hyderabad, 24-28, February, 2021.
61. Invited speaker at the Fifth International Webinar on Recent Trends in Statistical Theory and Applications-2021 (WSTA– 2021), University of Kerala, 29th June - 2nd July 2021.
62. Invited talk on Zero-inflated Count Time series at a Webinar on Recent Innovations in Statistics, University of Calicut, June, 8-9, 2022.
63. Presented an Invited talk on Autoregressive-type models for count time series at an International Conference on Statistical Sciences and Stochastic Modelling. University of Calicut, 16-17 February, 2023.
64. Presented an invited talk on Stochastic Models for Count Time Series at International Conference on Statistics "NEW AGE STATISTICS FOR DATA SCIENCE AND ARTIFICIAL INTELLIGENCE", NMIMS, Mumbai, 20-23 March 2023.

65. Invited talk on "Models for Count time series" at Online workshop in memory of Professor C R Rao, ICAR, New Delhi, 10th September, 2023.
66. Invited talk on Goodness of fit for time series at International conference on Statistics and Data Science.45th annual conference of Kerala Statistical Association held at Sri Sankara College, Kalady, Kerala, 22-24, January 2024.
67. Invited talk on GARMA models for non-Gaussian time series, International Conference on Advances in Data Analytics and Official Statistics, SPP University, Pune, 24-26 May 2024.

TRAINING SESSIONS AND INTER-DISCIPLINARY LECTURES

1. An Introduction to Statistics in Economics. Invited talk at National seminar on Statistical Techniques in Management, Social and Biological Sciences, Lingaraj College, Belgaum, 13-14, February 2009.
2. A Bird's eye view of the applications of Statistics in inter-disciplinary research, Invited talk at National Seminar on Interdisciplinary applications in Statistics, Maharaja's College, Ernakulam, 25 -26, November 2010.
3. Regression analysis at a National Seminar on Modern Statistical Tools in Fisheries at School of Industrial Fisheries, Cochin University of Science and Technology, March 9, 2013.
4. Business Statistics for Short term Courses for Managers at ISI Bangalore during June, 2013.
5. Basic Time Series for the Internship program for M.Sc students organized by the ISI Chennai, 17 – 19, June 2013.
6. Served as a resource person for the Workshop on Random Processes and Applications at College of Engineering, Karunagappally, September, 10, 2013.
7. Resource person at ISI Bangalore for a short term course for Managers on Business Statistics. September 26, 2013.
8. Served as resource person in the UGC sponsored National Seminar on "Process Capability Studies with Special Emphasis on Computational Techniques and Recent Trends in Statistics" at Nirmala College, Muvattupuzha, 3-5, October 2013.
9. Delivered an Invited lecture on Markov Processes at a National Workshop on Probability Theory and its Applications, Amal Jyothi College of Engineering, Kanjirapally, 28-30, April 2014.
10. Engaged classes on Time series as a Resource person at TEQIP sponsored Short time training program on Statistical Techniques and Applications in Engineering Research at Government Engineering College, Trichur on 19 March 2015.
11. Lecture and hands-on training for a Tequip Workshop on Linear and non-linear signals in Biomedical Engineering at NIT, Raipur during 9-11, September 2016.
12. Engaged two lectures at a Workshop on Random Processes and Applications held at MES College of Engineering ,Kuttipuram during 26 – 27, October, 2016.
13. Delivered two lectures on Introduction to ARCH/GARCH models for a training program on Time Series at College of Engineering Trivandrum, 16 November, 2016.

14. Delivered a talk on Time Series Analysis in the Workshop on Applied Statistical Techniques held at CUSAT, 19 – 21, January 2017.
15. Resource person for UGC-HRDC Refresher Course for Basic Sciences at University of Calicut on 22. 06. 2017.
16. Resource person at National Workshop on Statistical Methods for Data Analysis Using R at University of Kerala, 28. 10. 2017.
17. Resource person and Convener of A workshop on Time-to-events and Time series data analysis using R at CUSAT, 15 -18, December 2017.
18. Resource person for a Workshop on Time series analysis at Manipal Academy of Higher Education, August 1-2, 2018.
19. Resource person for a Workshop on Forecasting at Government Arts and Science College, Kozhikode. October 26, 2018.
20. Resource person on Time series forecasting in the special summer refresher course in mathematical sciences at Kannur University, 01-21, March 2018.
21. Resource person for a Refresher Course in Mathematics and Statistics, Academic Staff College, University of Madras, 20 October, 2020.
22. As a part of Public Outreach Program, delivered a talk on Time Series Forecasting for M.Sc students affiliated to the University of Calicut organized by Farooke College, Kozhikode, October 28, 2020.
23. Resource person in a Refresher Course for Statistics teachers at Bharathiar University Coimbatore, March 3rd, 2023.
24. Resource person in a Refresher Course in Mathematics and Astronomy at University of Calicut, October 7th, 2023.