

CURRICULUM VITAE

Name : DEBASIS BHATTACHARYA
Permanent Address : 10 Galiff Street, Block #6, Flat #67, Calcutta-700003
e-mail : debasis_us@yahoo.com
Phone number : 9434493185
Present Position : Professor of Statistics (since August, 2006), Visva-Bharati University, Santiniketan, W.B, India
Research Interests : Statistical Inference for dependent processes, Probability, Risk Analysis, Reliability engineering, Bayesian Inference, Time series modelling and forecasting
Academic Qualification : Ph.D.(Statistics)
(Title of the Thesis: Asymptotic Properties of Log-likelihood Ratios for Dependent Processes)

Academic Career:

B.Sc. (Honours) in Statistics from the University of Calcutta
M.Sc. in Statistics from the University of Calcutta, stood First
Ph.D. from the University of Calcutta

Administrative Experience:

Served as **Dean**, Institute of Agriculture, Visva-Bharati, September 2019- September 2021.
Served as **Professor-in-charge, Academic and Research** of Visva-Bharati university during 2012-2014.
Served as Department **Head** during June, 2009 - December, 2014

Present Administrative Positions:

Serving as **Chair Professor**, A.K. Dasgupta Centre for Planning and Development, Funded by Niti Aayog, GoI
Serving as **Hony. Director**, Agroeconomic Research Centre, Ministry of Agriculture and Farmers' Welfare, GoI, Visva-Bharati
Serving as **Department Head** since November 2016, Department of Agricultural Statistics, Institute of Agriculture, Visva-Bharati.

Teaching Experience:

Teaching since 1989, 35 years of teaching experience at both, undergraduate and postgraduate levels of Indian and Foreign Universities.

Visiting Professor in the Department of Statistics, University of California, Davis, USA, since 1998-2001, 2006, 2007, 2008, 2009, 2012

Taught several Courses for the Department of Statistics, University of California, Davis, USA during visits.

Visiting Fellow (under UGC-SAP), Department of Statistics, Panjab University, Chandigarh, 2011. 2014

Visiting Fellow (under UGC-SAP), Department of Statistics, Sardar Patel University, Vallabh Vidyanagar, Anand, Gujrat, 2019

Publication Summary:

Total publications: 132 (published with well-known international publishers like Elsevier, Marcel Dekker, Kluwer, Wiley, Springer, Taylor and Francis, World Scientific, Sage, Allerton Press, IMS etc.)

Journals of International Repute: 54; Reputed National Journals: 39; Books Authored: 8; Book Chapters: 18; Technical Reports: 9; Books Edited: 4

Research Grants:

Grant from Teaching Resources Center, University of California, Davis, California, USA.

Grant from University Grants Commission in the form of fellowship.

Partial Financial Grant for research from Visva-Bharati.

Award:

Award of "Distinguished Statistician" has been conferred by the Indian Society for Probability and Statistics.

Membership of Learned Society:

The American Statistical Association, The Institute of Mathematical Statistics, USA, Indian Statistical Institute, Calcutta Statistical Association, Indian Science Congress Association, Indian Association for Productivity, Quality and Reliability

International research collaboration: Collaborative research work done at the University of California, Davis, USA

Supervised Ph.D. Students: Awarded: 7, Continuing: 5

Editorial Responsibility:

Editor of the Journal “Stochastic Modeling and Applications”, ISSN: 0972-3641

Associate Editor of the “Journal of the Indian Society for Probability and Statistics”, ISSN:2277-9620

Associate Editor of the Journal “IAPQR Transactions”, ISSN: 0970-0102

Editorial Board Member of the Journal “Calcutta Statistical Association Bulletin”, ISSN:2348-1315 (Print), 2456-6462 (Online)

Editorial Board Member of the Journal “Global and Stochastic Analysis”, ISSN:2248-9444

Products Developed: Developed a Statistical Calculator for analyzing Data Sets.

Technologies Developed:

Developed a Statistical Calculator for analyzing Data. The calculator has become very popular among the researchers and students of agriculture considering its usefulness. The calculator has been briefly described in the paper “Statistical Analysis Step-By-Step Using Statistical Calculator” published in International journal of Current Microbiology and Applied Sciences, 2018, 7(11), 901-921 (co-authored by Dr. D. S. Dhakre)

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Visited Universities abroad for Academic purpose:

Stanford University, USA (2000), Purdue University, USA (1995), University of California, Davis, USA (1998-2001, 2006, 2007, 2008, 2009, 2012), Korea University, Seoul (1998), National University of Singapore, Singapore (2002), Kazakhstan Institute of Management, Economics and Strategic Research (KIMEP)(2003), Rice University, Houston, Texas, USA (2004), Fu Jen University, Taipei, Taiwan (2007), National Cheng- Kung University, Tainan, Taiwan (2008)

Referee /Reviewer of the journals:

Journal of Inequality and applications, Statistics and Probability Letters, Journal of Statistical Planning and Inference, Journal of Multivariate Analysis, Communication in Statistics; Theory and Methods, Naval Research Logistics, Journal of Applied Statistics, Sankhyā, Model Assisted Statistics and Applications, Calcutta Statistical Association Bulletin, IAPQR transaction

List of Publications:

1. Basu, A.K. and Bhattacharya, D. (1988), Local Asymptotic Mixed Normality of Log- likelihood Based on Stopping Times. *Calcutta Stat. Assoc. Bull.*, 37, Nos. 147- 148, 143-159, Sage publications.
2. Basu, A.K. and Bhattacharya, D. (1990), Weak Convergence of Randomly Stopped Log-likelihood Ratio Statistic to Mixed Gaussian Process. *Calcutta Stat. Assoc. Bull.*, 39, Nos.155-156, 137-149, Sage publications.
3. Basu, A.K. and Bhattacharya, D. (1992), On the Asymptotic Non-null Distribution of Randomly Stopped Log-likelihood Ratio Statistic. *Calcutta Stat. Assoc. Bull.*, 42, Nos. 167-168, 225-260, Sage publications.
4. Basu, A.K. and Bhattacharya, D. (1993), On the Speed of Convergence in the Central Limit Theorem of Log-likelihood Ratio Process, *Journal of Theoretical Probability*. 6, No.4, 619-634, Springer publications.
5. Basu, A.K. and Bhattacharya, D. (1994), On the Speed of Convergence in the Central Limit Theorem of Sequential Log-likelihood Ratio Process, *Sequential Analysis*. 13(2), 97-111, Taylor and Francis publications.
6. Basu, A.K. and Bhattacharya, D. (1994), On the Speed of Convergence in the Central Limit Theorem of Sequential Log-likelihood Ratio Process to Standard Mixture of Normal Distributions. *Indian Journal of Pure and Applied Mathematics*, Published by the Indian National Science Academy, 25, 1017-1029.
7. Bhattacharya, D., Gangopadhyay, P.K. and Sahu, J. (1997), Real Adoption impact – A New Approach of Measuring Adoption. *Bangladesh Journal of Agricultural Science*, 24(1), 85-90, Bangladesh Agricultural University, Mymensingh publications.
8. Basu, A.K. and Bhattacharya, D. (1998), On Fixed-width Confidence Intervals Associated with Maximum Likelihood Estimation of Parameter under Dependent Set-up. *Mathematical Methods of Statistics*, 7(4), 466-478.

9. Bhattacharya, D. and Roussas, G.G. (1999), On Asymptotically Efficient Tests for Autoregressive Process. *Stochastic Modeling and Applications*, Vol.2, 17-30.
10. Basu, A.K. and Bhattacharya, D. (1999), Asymptotic Minimax Bounds for Sequential Estimators of Parameters in a Locally Asymptotically Quadratic Family. *Brazilian Journal of Probability and Statistics*, 13, 137-148.
11. Roussas, G.G. and Bhattacharya, D. (1999), Some Asymptotic Results and Exponential Approximation in Semi-Markov Models, Chapter 8. *Semi-Markov Models and Applications*, 149-166, Eds. J. Janssen and N. Limnios, Kluwer Academic Publishers.
12. Roussas, G.G. and Bhattacharya, D. (1999), Asymptotic Behavior of the Log-likelihood Function in Stochastic Processes when based on a Random Number of Random Variables, Chapter 7. *Semi-Markov Models and Applications*, 119-147, Eds. J.Janssen and N. Limnios. Kluwer Academic Publishers.
13. Bhattacharya, D. and Roussas G.G. (2001), Exponential Approximation for Randomly Stopped Locally Asymptotically Mixture of Normal Experiments. *Stochastic Modeling and Applications*, 4, 56-71.
14. Roussas G.G., Bhattacharya, D. (2002), Exponential approximation of distributions. *Teor. Imovirmost. ta Matem. Statyst*, 62, also in Technical Report # 347, Division of Statistics, University of California, Davis.
15. Bhattacharya, D. (2003), Asymptotic Efficiency of Estimates of Parameters for a Locally Asymptotically Mixed Normal Family under Asymmetric Loss, *Proceedings of the International Conference on Advances in Statistical Inferential Methods*, Almaty, Kazakhstan, 31-40.
16. Bhattacharya, D., Samaniego, F.J. and Vestrup, E.M. (2003), On the Comparative Performance of Bayesian and Classical Point Estimators under Asymmetric Loss, *Sankhya* (Series B), 64, 239-266.
17. Roussas, G.G. and Bhattacharya, D. (2003), Exponential Approximation of Distributions, *Theory of Probability and Mathematical Statistics* (American Mathematical Society), 66, 119-132.
18. Bhattacharya, D. and Basu, A.K. (2004), On the Speed of Convergence of Randomly Stopped Log-likelihood Ratio Processes to Standard Mixture of Normal Distributions, *Stochastic Modeling and Applications*, 7(1), 44-60.
19. Levine, R.A. and Bhattacharya, D. (2005), On Asymptotically Efficient Sequential Tests for Auto-regressive Time Series with a Unit Root, *Journal of Probability and Statistical Science*, 2(3), 213-228, Susan River's Cultural Institute publications, Taiwan.
20. Bhattacharya, D. and Basu, A.K. (2006), Local Asymptotic Minimax Risk Bounds in a Locally Asymptotically Mixture of Normal Experiments under Asymmetric Loss, *Lecture Notes-Monograph Series*, 49, 312- 321, Institute of Mathematical Statistics Publications.
21. Bhattacharya, D. and Levine, R.A. (2007), Bayesian Estimation and Prior Selection for the AR (1) Model using symmetric Loss Function, *Journal of Applied Statistical Science*, 15(3), 295-304, Nova Publications, USA.
22. Samaniego, F.J., Vestrup, E.M. and Bhattacharya, D. (2007), On Constrained Estimation from Time-Use Survey data, *Statistics and Probability Letters*, 77, 204-210, Elsevier publications.
23. Navaro, J., Samaniego, F.J., Balakrisnan, N. and Bhattacharya, D. (2008), On the Application and Extension of System Signatures to Problems in Engineering Reliability, *Naval Research Logistics*, 55, 313-327, Wiley inter Science publications.
24. Roussas, G.G. and Bhattacharya, D. (2008), Hájek-Inagaki Representation Theorem for Randomly Stopped Locally Asymptotically Mixture of Normal Experiments, *Statistical Inference for Stochastic Processes*, DOI: 10.1007/s11203-008-9029-0,185-201, Springer publications.
25. Roussas, G.G. and Bhattacharya, D. (2008), Hájek-Inagaki Representation Theorem, under a General Stochastic Processes Framework, based on Stopping Times, *Statistics and Probability Letters*,78, 2503-2510, Elsevier publications.
26. Roussas, G.G. and Bhattacharya, D. (2008), Asymptotic Expansions, Exponential Approximation, and the Hájek-Inagaki Representation Theorem under a General Dependence Set-up, *Proceedings of 20th Annual meeting of the Pan-Hellenic Greek Statistical Institute*, 45-65.
27. Bhattacharya, D. and Samaniego, F.J. (2008), On the Optimal Allocation of Components within Coherent Systems, *Statistics and Probability Letters*, 78, 938-943, Elsevier publications.
28. Roychowdhury, S. and Bhattacharya, D. (2008), A Note on Comparison of Performances of Systems of Different Order, *Journal of Applied Statistical Science*,16 (3), 293- 301.

29. Roychowdhury, S and Bhattacharya, D. (2008), On the performance of estimators of parameter in autoregressive model of order one and optimal prediction under asymmetric loss, *Model Assisted Statistics and Applications*, 3(3), 225-232. IOS publications, The Netherlands.
30. Roychowdhury, S. and Bhattacharya, D. (2009), Rearrangement of components in a system using component importance measures, *Journal of Statistical Theory and Practice*, 3(4),841-854, Taylor and Francis publications.
31. Roussas, G.G. and Bhattacharya, D. (2010), Asymptotically optimal tests under general dependence set-up, Special issue in honor of Prof. B. Efron, *Journal of Statistical Research*, 44(1), 57-83.
32. Bhattacharya, D. and Samaniego, F.J. (2010), On estimating component characteristics from system failure-time data. *Naval Research Logistics*, 57, 380-389, Wiley inter Science publications.
33. Roussas, G.G. and Bhattacharya, D. (2010), Revisiting Local Asymptotic Normality (LAN) and passing on to Local Asymptotic Mixed Normality (LAMN) and Local Asymptotic Quadratic Experiments (LAQ), *A Festschrift in honor of Prof. J. S. Rao*, Eds. Wells, M.T. and Sen Gupta, A., 253-280, Physica-Verlag (Springer).
34. Samaniego, F.J. and Bhattacharya, D. (2010), A conversation with George Roussas, *Statistical Science*, 25(4), 566-587, Institute of Mathematical Statistics publications.
35. Roychowdhury, S. Bhattacharya, D. (2010), Improving System Reliability using Conditional Reliability Importance, *Proceeding of the Institution of Mechanical Engineering, Part O, Risk and Reliability*, Vol.225, 91-99, Sage publications.
36. Roychowdhury, S. Bhattacharya, D. (2010), On Estimation of Regression Parameter under Asymmetric Loss, *Journal of Applied Probability and Statistics*, 5(2), 161-168, Dixie publications, USA.
37. Roychowdhury, S. Bhattacharya, D. (2011), Effect of Dependence of Components on the System Performance (2011), *International Journal of Pure and Applied Mathematics*, 66(1), 91-112, Academic publications, Bulgaria.
38. Roychowdhury, S. Bhattacharya, D. (2011), Comparison of Lifetimes of Coherent Systems using a Stochastic Ordering Criterion, *Model Assisted Statistics and Applications*, 6(4), 287-305, IOS publications, The Netherlands.
39. Roychowdhury, S. Bhattacharya, D. (2011), On the Selection of a Best System from a Group of Systems with Mutually Dependent Component Lives, *Statistical Methods in Optimization and Operations Research, Model Assisted Statistics and Applications*, 6 (3), 239-247, IOS publications, The Netherlands.
40. Roussas, G.G. and Bhattacharya, D. (2012), Density Estimation by Sampling from Stationary Continuous Time Parameter Associated Processes Nonparametric Statistical Methods and Related Topics, *A Festschrift in Honour of Prof. P.K. Bhattacharya*, Eds. J. Jiang, G.G. Roussas, F.J. Samaniego, Chapter 5,101-125, World Scientific.
41. Bhattacharya, D. and Roychowdhury, S. (2013), A General Rule for Optimally Allocating Redundant Components in a Coherent System, *American Journal of Mathematical and Management Sciences*, 32(2), 101-117, Taylor & Francis publications.
42. Bhattacharya, D. and Roychowdhury, S. (2013), Reliability of a Coherent System in a Multi-component Stress-strength Model, *American Journal of Mathematical and Management Sciences*, 32(1), 40-52, Taylor & Francis Publications.
43. Bhattacharya, D. and Roychowdhury, S. (2013), An Optimal Policy for Solving a Generalized Problem of Constrained Redundancy Allocation in Coherent Systems, *American Journal of Mathematical and Management Sciences*, 32(4), 210-227, Taylor & Francis publications.
44. Bhattacharya, D. and Roychowdhury, S. (2013), Optimal Redundancy Allocation Rule for Improving System Life (2013), *Journal of Uncertainty Analysis and Applications*, 1(14), 1-9, Springer publications.
45. Bhattacharya, D. and Roychowdhury, S. (2013), On Comparison of Performances of Competing Supply Chain System Designs, *Unlock Management*, 4(1), 25-31. (ISSN: 0975-8038), Solapur University publications.
46. Bhattacharya, D. and Roychowdhury, S. (2014), A Constrained Cost Minimizing Redundancy Allocation Problem in Coherent Systems with Non-Overlapping Subsystems, *Advances in Industrial Engineering and Management*, 3(3), 1-6, American Scientific publishers.
47. Bhattacharya, D. and Roychowdhury, S. (2014), A Study on Estimation of Reliability of a Coherent System under Field Condition, *Model Assisted Statistics and Applications*, Special Issue on Statistical Estimations in Complex Problems, 9(2), 181-189, IOS publications, The Netherlands.
48. Dhakre, D. S. and Bhattacharya, D. (2014), A Study on the Consumption Pattern of NPK in Midnapur District and West Bengal, *Environment and Ecology*, 32(1A), 225-229.49.

49. Dhakre, D. S. and Bhattacharya, D. (2014), Price Behavior of Potato in Agra Market – A Statistical Analysis, *Indian Research Journal of Extension Education*, 14(2), 12-15.
50. Bhattacharya, D. and Roychowdhury, S. (2014), Redundancy Allocation using Component-Importance Measures for Maximizing System Reliability, *American Journal of Mathematical and Management Sciences*, 33(1), 36-54, Taylor and Francis publications.
51. Roychowdhury, S. Bhattacharya, D. (2015), Stochastic Optimization of System Performance using Cold-Standby Redundancy (2015), *American Journal of Mathematical and Management Sciences*, 34(1), 1-13, Taylor and Francis publications.
52. Roychowdhury, S. Bhattacharya, D. (2015), On Constrained Reliability Maximization using Active Redundancy in Coherent Systems with Non-Overlapping Subsystems (2015), *An International Journal of Optimization and Control: Theories and Applications*, 5(1), 33- 39.
53. Bhattacharya, D. and Roychowdhury, S. (2015), Performance-based Ranking and Selection of Complex Coherent Systems, *International Journal of Systems Assurance Engineering and Management*, 6(1), S82-S89, Springer publications.
54. Bhattacharya, D. and Roychowdhury, S. (2015), On Performance of Competing Estimators under Bayes, Frequentist and Combined Frameworks, *American Journal of Mathematical and Management Sciences* 34(3), 265-288, Taylor & Francis publications.
55. Bhattacharya, D. and Roychowdhury, S. (2016), Bayesian Importance Measure Based Approach for Optimal Redundancy Assignment, *American Journal of Mathematical and Management Sciences*, 35(4), 335-344, Taylor & Francis publications.
56. Bhattacharya, D. and Roychowdhury, S. (2016), A Redundancy Strategy for Minimizing Cost in Systems with Non-Disjoint Subsystems under Reliability Constraint, *International Journal of Systems Assurance Engineering and Management*, DOI 10.1007/s13198-016-0499-y, Springer publications.
57. Bhattacharya, Debasis and Roussas, George G. (2017), Limiting Experiments and Asymptotic Bounds on Performance of Sequence of Estimators, *From Statistics to Mathematical Finance, Festschrift in Honour of Winfried Stute*, Editors: D. Ferger, W.G. Manteiga T. Schmidt and J. L. Wang, Chapter 16, 317-342, Springer publications
58. Roychowdhury, Soma and Bhattacharya, Debasis (2017), Uncovering Data for Decision Making with Critical Statistical Analysis, *Statistical Tools and Analysis in Human Resources Management*, Editor: D. K. Bhattacharyya, Chapter 3, 38-53, IGI Global, USA
59. Dash, A., Dhakre, D.S. and Bhattacharya, D. (2017), Study of growth and instability in food grain production of Odisha: a statistical modelling approach, *Environment & Ecology*, 35(4D), 3341-335.
60. Dash, Abhiram, Dhakre, D.S. and Bhattacharya, D. (2017), Fitting of Appropriate model to study growth rate and instability of mango production in India, *Agricultural Science Digest*, 37(3), 191-196.
61. Dash, A., Dhakre, D.S. and Bhattacharya, D. (2017), Analysis of growth and instability in pulse production of Odisha during Rabi season: A statistical modelling approach, *International journal of Current Microbiology and Applied Sciences*, 6(8), 107-115.
62. Dash, A., Dhakre, D.S. and Bhattacharya, D. (2017), Fitting of appropriate statistical model for study of growth and instability in cereal production of Odisha, *Journal of Pharmacognosy and Phytochemistry*, 6(5), 2495-2499.
63. Dash, A., Dhakre, D.S. and Bhattacharya, D. (2017), Analysis of growth and instability in rice production of Odisha by fitting appropriate statistical models, *International journal of Current Microbiology and Applied Sciences*, 6(10), 3313-3322.
64. Bhattacharya, Debasis and Roychowdhury, Soma (2018), Optimal Redundancy Allocation in Homogeneous Multi-State Coherent Systems, *American Journal of Mathematical and Management Sciences*, Vol. 37(4), 358-369, Taylor and Francis.
65. Roychowdhury, Soma and Bhattacharya, Debasis (2018), Configurational Significance of Multi-State Components, A Multi-State Parallel-Series System, *Contemporary Corporate Strategies: Global Perspectives*, 129-136, Success Publication.
66. Dhakre, D.S. and Bhattacharya D. (2018), Statistical Analysis Step-By-Step Using Statistical Calculator, *International journal of Current Microbiology and Applied Sciences*, 7(11), 901-921

67. Pal, A., Dhakre, D.S., and Bhattacharya, D. (2019), Real Adoption impact measure of rice production using SRI methodology, *Journal of Pharmacognosy and Phytochemistry*, 8(1), 208-212.
68. Pal, A., Dhakre, D.S., and Bhattacharya, D. (2019), An Analysis of Constraints in Large Scale Dissemination of System of Rice Intensification (SRI) in Odisha, India, *International journal of Current Microbiology and Applied Sciences*, 8(7), 1898-1906.
69. Nath, B., Dhakre, D.S., and Bhattacharya, D. (2019), Forecasting wheat production in India: An ARIMA modelling approach, *Journal of Pharmacognosy and Phytochemistry*, 8(1), 2158-2165.
70. Roychowdhury, Soma and Bhattacharya, Debasis (2019), Performance Improvement of a Multi-State Coherent System using Component Importance Measure (2019), *American Journal of Mathematical and Management Sciences*, 38 (3), 312–324.
71. Dash, A., Bhattacharya, D. and Dhakre D.S. (2019), Use of regression model and ARIMA model for forecasting kharif food grain production of Odisha: A comparative study, *International Journal of Multidisciplinary Research and Development*, 6(12), 107-116, Online ISSN: 2349-4182, Print ISSN: 2349-5979.
72. Nath, Bhola, Dhakre, D. S., Sarkar, K. A. and Bhattacharya, D. (2020), The challenge of selecting the best forecasting model for a time series data, *Journal of Food, Agriculture & Environment*, 18 (2), 97 – 102.
73. Roussas, George G., Bhattacharya, Debasis (2020), A Conversation with Francisco J. Samaniego, *Statistical Science*, 35(2), 321–333.
74. Gupta, A.K., Sarkar, K. A., Bhattacharya, D, and Dhakre, D. S. (2021), Potato yield modelling based on meteorological factors using discriminant analysis and artificial neural networks, *International Journal of Vegetable Science*, DOI: 10.1080/19315260.2021.2021342.
75. Gupta, S.K., Bhattacharya, D. (2022), Nonparametric estimation of bivariate reliability from incomplete two-dimensional warranty data, *Reliability Engineering and System Safety*, 222, DOI: 10.1016/j.ress.2022.108385.
76. Kumar, Ravi Ranjan, Sarkar, Kader Ali, Bhattacharya, Debasis and Dhakre, Digvijay Singh (2022), Spatiotemporal trend analysis of rainfall data in Bihar using nonparametric tools, *Environment and Ecology*, 40(3A), 1305-1302.
77. Sarkar, Kader Ali, Kumar, Ravi Ranjan, Dhakre, Digvijay Singh and Bhattacharya, Debasis (2022), Analysis of Spatiotemporal trend of solar radiation in the agroclimatic Zone- I of Bihar, *The Pharma Innovation*, SP-11(9), 431-438.
78. Kumar, Ravi Ranjan, Sarkar, Kader Ali, Dhakre, Digvijay Singh and Bhattacharya, Debasis (2022), A Hybrid Space–Time Modelling Approach for Forecasting Monthly Temperature, *Environmental Modeling & Assessment*, <https://doi.org/10.1007/s10666-022-09861-2>.
79. Pal, A., Dhakre, D.S., Bhattacharya, D. and Dash, A. (2022), Economic Impact of Adoption of System of Rice Intensification, *Environment and Ecology*, 40 (3A), 1373—1378.
80. Dash, Abhiram, Bhattacharya, Debasis, Dhakre, Digvijay Singh, Kishan, Madhuchhanda (2022), On Selection of Best Model from Spline Regression and ARIMA Models for Forecasting Rabi Food Grain Production of Odisha, *Environment and Ecology*, 40 (3B), 1428—1437.
81. Ms. Mamata and Bhattacharya, D. (2022), Use of Markov chain model for studying disparities among districts producing potato: a major crop of West Bengal, India, *Scientist*, 1(3). 2022. 3702-3710, DOI: <https://doi.org/10.5281/zenodo.7336612>.
82. Nath, B. and Bhattacharya, D. (2022), A study on trend and forecast of vegetable cultivation of West Bengal, *Environment and Ecology*, 40(3C), 1612—1623.
83. Dhakre, Digvijay Singh, Bhattacharya, Debasis, Nath, Bhola. (2023), Analysis of Published work in Sangeet Galaxy e-Journal during 2012-2022: A Statistical Study, *Sangeet Galaxy*, 12(1), 5-19.
84. Gupta, Akhilesh Kumar, Sarkar, Kader Ali, Dhakre, Digvijay Singh, Bhattacharya, Debasis (2023), Weather Based Crop Yield Prediction using Artificial Neural Networks: A Comparative Study with other Approaches, *MAUSAM*.
85. Ms. Mamata and Bhattacharya, D. (2023), Use of Markov chain model for studying disparities in Chickpea productivity among the Chickpea producing districts of West Bengal, India. *Environment and Ecology*, 41(1A), 354-361.
86. Nath, B. and Bhattacharya, D. (2023), Historical pattern of Rice productivity in India, *Environment Conservation Journal*, 24(1), 225—231.

87. Chandran, Arya V., Dhakre, Digvijay Singh, Bhattacharya, Debasis, Sarkar, Kader Ali (2023), Analysis of job satisfaction of Tea Plantation workers of Kerala using a structural equation modelling approach, *The Journal of Research ANGRAU*, 51(3), 136-146.
88. Chandran, Arya V., Dhakre, D. S., Bhattacharya, Debasis, Sarkar, K. A. (2023), Nonparametric Trend Analysis of Tea Cultivation in India. *Environment and Ecology*, 41(4D), 3087-3092.
89. Ms. Mamata and Bhattacharya, D. (2023), Use of Markov chain model for studying disparity in rice yield in the major rice producing districts of West Bengal, India. *International Journal of Statistics and Applied Mathematics*, SP-8(4), 78-83.
90. Mahapatra, Subrata Kumar, Dhakre, Digvijay Singh, Bhattacharya, Debasis, Sarkar, Kader Ali (2024), Forecasting of finger millet production in Odisha by ARIMA and ANN model: A comparative study. *International Journal of Statistics and Applied Mathematics*, SP-9(1), 276-281.
91. Mahapatra, Subrata Kumar, Dhakre, Digvijay Singh, Bhattacharya, Debasis, Sarkar, Kader Ali (2024), Statistical Study on Growth and Instability of Area, Production and Productivity of Selected Cereal, Millet and Oilseed Crop of Odisha. *Bhartiya Krishi Anusandhan Patrika*, 19(3-4), 323-327.
92. Muhammed Irshad M., Sarkar, Kader Ali, Dhakre, Digvijay Singh, Bhattacharya, Debasis, (2024), Forecasting of monthly cardamom price using long memory time series technique. *International Journal of Statistics and Applied Mathematics*, 9(6), 121-126.
93. Muhammed Irshad M., Sarkar, Kader Ali, Dhakre, Digvijay Singh, Bhattacharya, Debasis, (2024), Comparative Analysis of Statistical Model and Machine Learning Algorithms in Forecasting Black Pepper Price of Kerala. *Biological Forum - An International Journal*, 16(8),63-68.

Technical Reports:

1. On the speed of convergence in the central limit theorem of log-likelihood ratio process (1991), Technical Report #3/91, Department of Statistics, Calcutta University, A. K. Basu and D. Bhattacharya)
2. Asymptotic behavior of the log-likelihood function in stochastic processes when based on a random number of random variables (1999), Technical Report # 346, Division of Statistics, University of California, Davis, Roussas, G.G. and Bhattacharya, D.
3. Exponential Approximation of Distributions (1999). Technical Report # 347, Division of Statistics, University of California, Davis, Roussas, G.G. and Bhattacharya, D.
4. Some asymptotic results and exponential approximation in semi-Markov models (1999), Technical Report # 348, Division of Statistics, University of California, Davis, Roussas, G.G. and Bhattacharya, D.
5. Exponential approximation for randomly stopped locally asymptotically mixture of normal experiments (2000), Technical Report # 361, Division of Statistics, University of California, Davis, Roussas, G.G. and Bhattacharya, D.
6. Bayesian Estimation and prior selection for the AR (1) model using asymmetric loss Function (2000). Technical Report # 353, Division of Statistics, University of California, Davis, Levine, R. A. and Bhattacharya, D.
7. On the comparative performance of Bayesian and classical point estimators under asymmetric loss (2001). Technical Report, Division of Statistics, University of California, Davis, Bhattacharya, D., Samaniego, F.J. and Vestrup, E.M.
8. On asymptotically efficient sequential tests for auto-regressive time series with a unit root (2001). Technical Report, Division of Statistics, University of California, Davis: Bhattacharya, D. and Levine, R.A.
9. On Constrained Estimation from Time-Use Survey data (2001). Technical Report, Division of Statistics, University of California, Davis: Samaniego, F.J., Vestrup, E.M.,and Bhattacharya, D.

Book chapters:

1. An Approach to Improving System Reliability of Coherent Systems by Rearranging the Components (2010), A chapter in the edited book Operations and Management Sciences 2010, pp. 453-458, Eds. J. Sharma and S. Maheswaran, Excel India Publishers (jointly with S. Roychowdhury) (ISBN 978-93-80043-79-1)

2. Risk Management in System Performance (2010), A chapter in the edited book Project Risk Management: Identifying, Forecasting and Mitigating Project Risk, pp. 106- 113,Eds. Sabita Pathak and Sarika Sharma, Wright Publication (jointly with S. Roychowdhury) (ISBN 979-9087533821)
3. Risk of System Failure under Dependent Set Up (2011), A chapter in the edited book A New Blue Print for Management in 21st Century, pp. 99-105, Eds., S. H. Gawhane and O. P. Haldar, Himalaya Publishing House, (jointly with S. Roychowdhury) (ISBN 978-93-5024-769-3)
4. Estimating Risk of Failure of Systems with Positively Dependent Component Failures (2011), A chapter in the edited book 'The Rousing Challenges of Management Systems and Practices in 21st Century', pp.101-105, Eds., E. B. Khedkar and O. P. Haldar, Himalaya Publishing House, (jointly with S. Roychowdhury) (ISBN 978-93-5051-476-4)
5. Managing Change in System Reliability with the Change in Environmental Variable (2011), A chapter in the edited book Information Technology Management, pp. 87-92, Eds. Sabita Pathak and Sarika Sharma, Right Publishing & Press, (jointly with S. Roychowdhury) (ISBN 978-3-8454-4046-0)
6. Statistics for Impact Analysis (2012), A chapter in the edited book Statistics in Social Science and Agricultural Research, pp.233-242, Eds. Debasis Bhattacharya and Soma Roychowdhury, Concept Publishing Company Pvt. Ltd. (ISBN-13: 978-81-8069-822-4)
7. Assessing Risk of Failure of a Parallel Series System under Dependent Set-up (2012), A chapter in the edited book Innovation for Organizational Excellence, pp.3-11, Eds. Manoj W. Meghrajani, Himalaya Publishing House, (jointly with S. Roychowdhury) (ISBN 978-93-5051-684-3)
8. Performance Management of a Coherent System under Field Conditions (2012), A chapter in the edited book Technology and Business Innovation, pp.20-26, Eds. Sabita Pathak and Sarika Sharma, Wright publications, (jointly with S. Roychowdhury) (ISBN: 978-3-659-27554-8)
9. A Quantitative Approach to Assessing Stress-Strength Stability (2013), A chapter in the edited book Economic Reforms: Problems and Prospects before Indian Industries, pp. 95-99, Eds. Sharad, N. Inamdar, Manoj W. Meghrajani and Ganesh S. Lande, Himalaya publishing House, (jointly with S. Roychowdhury) (ISBN: 978-93-5097-574-9)
10. On Comparison of Performances of Competing Supply Chain System Designs (2013), A chapter in the edited book Blazing Trails with Strategic Management, pp.242-248, Eds.V.S. Mangnale, Minesh S.Ade, Anjali Upadhye, Abhihek A. Khadtare and Dasharath Bhoite, published by Sinhgad Institute of Business Management, Kamalapur (jointly with S. Roychowdhury) (ISBN:978-81-921232-1-9).
11. Managing Risk of failure of a Coherent System using Component Redundancy (2013), A chapter in the edited book Challenges and Opportunities in Business Management and Information Technology, pp. 55-60, Eds. E.B. Khedkar and O.P. Haldar, Himalaya Publishing House, (jointly with S. Roychowdhury) (ISBN Number: 978-93-5097-528-2),
12. On Selection of the Best System Component in a Profit Maximizing Redundancy Allocation Problem (2013), A chapter in the edited book Management Systems, pp.21-28, Eds. Sabita Pathak, Sarika Sharma, Neha Tejwani, Wright Academic Series publications, (jointly with S. Roychowdhury) (ISBN: 978-3-8443-1537-84)
13. Managing System Reliability Through Structural Importance (2014), A chapter in the edited book Achieving Sustainability and Growth in Challenging Time, Eds. Sharad N. Inamdar, Manoj W. Meghrajani and Ganesh S. Lande, pp.89-96, Success Publications, (jointly with S. Roychowdhury) (ISBN 978-93-83993-09-3)
14. Reliability Comparison of Systems with Associated Component Lives (2014), A chapter in the edited book Strategies, Challenges, Core Values and Emerging Trends in Management and IT Applications, Eds. E. B. Khedkar and O. P. Haldar, pp.1-6, Success Publications (jointly with S. Roychowdhury) (ISBN: 978-93-83993-00-0)
15. Active Redundancy Allocation in Multi-Component Coherent Systems using Birnbaum Structural Importance Measure (2015), A chapter in the edited book Strategies, Enhancing Employability through Skill Development Program, Ed. Dr. B.M. Londhe, pp.155-161, Chapter E001 (Chapter 1 of Engineering track), Sharp Publications, (jointly with S. Roychowdhury) (ISBN: 978-93-5158-172-7)
16. Role of Importance Measures in Redundancy Allocation in Coherent Systems (2015), A chapter in the edited book Innovative Quest in Management and Zest in Information Technology in Modern Era, Ed. O.P. Haldar, pp.216-221, (jointly with S. Roychowdhury) (ISBN: 978-93-84916-66-4)
17. System Performance Improvement through Redundancy Allocation for Active and Cold Redundancy (2016), A chapter in the edited book Innovation in Management and Technology, pp.33-40, Success Publications, (jointly with S. Roychowdhury) (ISBN- 978-93-5158-304-2)

18. A Bayesian Approach to Improving System Reliability using Redundancy (2016), A chapter in the edited book Recent Trends in Engineering and Management, pp.114-116, Success Publications (jointly with S. Roychowdhury) (ISBN No. 978-93-5158-299-1)

Text Books Authored:

1. *Managerial Statistics* (2011) (ISBN 978-93-80673- 45-5)
2. *Inferential Statistics* (2012) (ISBN 978-93-80673- 60-8)
3. *Decision making with data* (2013) (ISBN 978-93- 80673-81-3)
4. *Practical Statistics* (2013), 3rd edition (ISBN 978-93-80673-86-8)
5. *Exploring data* (2013) (ISBN 978-93-80673-80-6)
6. *Nonparametric Statistical Methods* (2016) (ISBN 978-93-85998-33-1)
7. *Probability and Statistical Inference: Theory and Practice*, 3rd edition, 2017 (ISBN 978- 93-80673-91-2)
8. *Statistics: Theory and Practice*, 3rd Edition reprinted in 2017 and 2022, 4th edition, 2024 (ISBN 978-93-94765-57-3)

Edited books

1. *Sustainable Agriculture – a Trade-off between Costs and Benefits* (1995), Visva-Bharati University
2. *Statistics in Social Science and Agricultural Research* (2012), Eds Debasis Bhattacharya and Soma Roychowdhury (ISBN-13: 978-81-8069-822-4)
3. *Modern Agricultural Technology: A Step Towards Rural Self-Reliance* (2021), Eds Kishore Chandra Swain, Debasis Bhattacharya, Binoy Kumar Saren and Subrata Mandal (ISBN-9788194923770)
4. *Impact of Covid-19 on Health and Economic Issues of India* (2022), Eds Debasis Bhattacharya and Daya Shankar Kushwaha (ISBN-9789393878533)

Conferences / Workshops Chaired and Delivered Invited Talks (Last Five Years):

1. Chaired a session in the 7th International Medical Olympiad Conference on “ Global Health: Emerging Trends and Future Challenges” held during 15-17 November, 2024, organized by the Centre for Nuclear Medicine, Punjab University, Chandigarh, and International Medical Olympic Association, Greece.
2. Delivered Key note speech in the National Conference on ‘Statistics and Data Science for Progress and Prosperity’ Organized by Department of Statistics, Utkal University, 23-24 August, 2024.
3. Delivered invited talk on ‘Big Data Analysis- an interface of Statistics and Computing’ as a Guest of Honour in the Plenary session of Skill Development Training on Big Data Analysis, 05.12.2023-14.12.2023, Organized by OUAT, Bhubaneswar.
4. Chaired a session in the international workshop on “Integrated approaches of stochastic Modeling and data science for sustainable development” held 7-11 September, 2022 organised by the Indian Society for Probability and Statistics in the honour of Professor C.R. Rao (Padam Vibhushan).
5. Chaired David Hanagal Endowment Lecture in the International Conference on “ Emerging Trends in Statistics and Data Science” 7- 10 September, 2021, organized by the Indian Society of Probability and Statistics.
6. Delivered P.V.Sukhatme Endowment Lecture on “ On the selection of Loss function for Estimation and Prediction problems” 7.9.2021, in the International Conference on Emerging Trends in Statistics and Data Science” 7- 10 September, 2021, organized by the Indian Society of Probability and Statistics.
7. Delivered invited talk on ‘Critical analysis of data to take right decision’ Diagnostic and remedial measures for common errors in application of statistics, 20-21st October, 2020, Department of Agricultural Statistics, Mathematics & Computer Application, Navsari Agricultural University, Gujrat.
8. Delivered invited talk on ‘Statistics for Engineers’ FDP organized by the Department of Radio Physics and Electronics, Computer Science and Engineering and Information Technology, Calcutta University, 23rd September - 3rd October 2020.
9. Delivered invited talk on ‘Uncovering data with all its uncertainty variability and fallibility’ FDP organized by the Department of MBA, Aliah University, 24th November-7th December 2020.

10. Invited speaker in International conference on Recent Advances in Statistics and Data Science for Sustainable Development, December 21-23, 2019, organized by Department of Statistics. Utkal University, held at Institute of Physics, Directorate of Atomic Energy Bhubaneswar, Odisha.
11. Invited speaker in National conference on High dimensional Data Analysis-Stochastic Optimization methods (UGC-SAP sponsored). December 9-10, 2019, organized by Department of Statistics, Pondicherry University.
12. Invited speaker in National Conference on 'Recent Advances in Statistics and Statistical Practice' Department of Statistics, Sardar Patel University, March 1-2, 2019. Invited speaker and chaired a session.
13. WB-OHEPEE sponsored National seminar on 'Statistical methodology and data science', March 15-16, 2019, at Utkal University, Bhubaneswar, invited speaker and chaired a session.
14. International Seminar on Next Generation Management-Issues and Challenges', March 15-16, 2019, Regional College of Management (RCM), Bhubaneswar, Delivered a talk as a Guest of Honour.
15. Invited talk delivered on 'Core statistical concepts and application for communication scholars and young faculty' 7-day workshop at CJMC on 4th February, 2019.
16. Delivered talk at CAFT training programme on 'Emerging Issues in Markets, Institutions and Resource use planning for Sustainable Agriculture', Centre of Advanced Faculty Training scheme of ICAR, 12th July 2018 to 1st August 2018.
17. Delivered talk at CAFT training programme on 'Quantitative Methods for Agricultural Policy Analysis' during 23rd January 2018 to 12th February 2018. This programme is sponsored by the Centre of Advanced Faculty Training scheme of ICAR.
18. Delivered invited talk on " Exploratory Data Analysis" 29th June, 2018, 12th National Statistics day and 126th Birth Anniversary of Late Prof. Prasanta Chandra Mahalanobis, organized by UBKV, Coochbehar.

Other International Workshops and Symposia Attended and Delivered Talk:

1. Second International Triennial Calcutta Symposium on Probability and Statistics, Dec.30, 1994 – Jan. 2, 1995 at Department of Statistics, University of Calcutta.
2. Workshop on "Intrinsic Bayes Factor", 11-12 June, 1995 at Department of Statistics, Purdue University, Indiana, USA.
3. Conference on Multiple Decision Theory and Related Inferences" 8-10, June, 1995 at Department of Statistics, Purdue University, Indiana, USA.
4. Workshop on "Statistical Methods in Market Research", 29-30 December, 1995 at Department of Statistics, University of Calcutta.
5. Lectures and Computer Workshop on "Introduction to Mathematica", 19-21 June, 2000 at University of California, Davis, USA.
6. Workshop on "Teaching First Year Courses and Seminars on Quantitative Reasoning", 6-8 July, 2000 at Department of Statistics, Stanford University, USA.
7. Summer Institute on Technology and Teaching, 17-21 July, 2000, University of California, Davis, USA.
8. Workshop on "Asymptotic Methods in Statistics and Probability" 19-21 May, 2001, Department of Statistics, University of California Davis, USA.
9. Symposium on Stochastic and Applications, 15-17 August, 2002, Department of Mathematics and Department of Statistics and Applied Probability, National University of Singapore, Singapore.
10. International Conference on "Advances in Statistical Inferential Methods (ASIM)" June 9-12, 2003, at Kazakhstan Institute of Management, Economics and Strategic Research, Almaty, Kazakhstan.
11. Fifth International Triennial Calcutta Symposium on Probability and Statistics, December 28-31, 2003, at Department of Statistics, University of Calcutta.
12. Second Erich L. Lehmann Symposium, May 19-21, 2004, at department of Statistics, Rice University, Houston, Texas, USA.
13. International Conference on Multiple Decision Theory, Statistical Inference and Applications, December 28-30, 2007, at Graduate Institute of Applied Statistics, Fu Jen Catholic University, Taipei, Taiwan.
14. International Workshop on Data Mining and Stochastic Modeling, January 29 – February 1, 2008, at Department of Statistics, Andhra University, India.
15. Symposium on Time series and related topics, 26-27 June, 2008, at University of California, Davis, USA

Popular Lectures Delivered and Popular Scientific Articles Published:

1. **Exploratory Data Analysis:** Lecture delivered in University Grant Commission sponsored Refresher Programme for University and College Teachers, Department of Botany, Calcutta University, published in *Exploring the vistas in Life Science*, pp. 165-169, 2007.
2. **Simpson's Paradox to Kaplan-Meier Estimator; Some Applications in Life Science**, Lecture delivered in Sixth University Grant Commission sponsored Refresher Program for College and University Teachers, Department of Botany, Visva-Bharati University, 2002.
3. **Bootstrapping – A Resampling Methodology:** Lecture delivered in a National Seminar on “Methodology and Science”, Department of Statistics, Visva-Bharati University. March 25- 27, 1999.
5. **Decision Theoretic Approach to Environmental Impact Analysis:** Selected readings on *Environmental Awareness and Education*, pp.103-110,1998.
6. **Weather Forecasting – An Aid to Environmental Awareness:** Selected readings on Environmental Awareness and Education, pp.87-95,1998.
7. **Decision Making Role of Rural Women in Rural Development – A Quantitative Study:** Proceedings of the National Symposium on Social Science Perspective in Agriculture Research, Visva-Bharati University, December 18-20, pp.143-156,1997.
8. **Statistical Predictability – An Overview:** Lecture delivered in a Seminar organized by the Department of Philosophy, Visva-Bharati University, **in memory of Karl Popper**, 1996.
9. **Sustainable Agriculture – A Trade-off between Costs and Benefits :** Proceedings of the National Seminar on Sustainable Agriculture in Sub-humid Zone, Visva- Bharati University, pp.436-444 (March 3-5,1995).
10. **Environmental Pollution – Some Issues and its Control :** Lecture delivered in Fourth University Grant Commission sponsored Refresher Program for College and University Teachers, Department of Botany, Visva-Bharati University, 1995.
11. **Traditional Wisdom in the Way of Generation of Statistical Methodology:** Presented in the Indian Social Science Congress, 1993, Bangalore, published in the Proceedings of ICSSR.

Home page and Other ids:

1. <https://sites.google.com/view/bhattacharyadebasis/home>
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5. Vidwan id: 125745