

Abhik Ghosh

Associate Professor

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Date of Birth: 30th April, 1990, Citizen of India

Postal Address

Interdisciplinary Statistical Research Unit,

Indian Statistical Institute,

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Education:

- 2012 – 2015, **Ph.D. in Statistics** (April, 2015), Indian Statistical Institute (ISI), Kolkata, India
 - Thesis: “Robust Minimum Divergence Inference using Density Power Divergence and its Extensions: Applications to Non-Identically Distributed Data and the Bayesian Paradigm”
 - Supervisor: Prof. Ayanendranath Basu
- 2010 – 2012, **Master of Statistics (M.Stat.), Ranked 1st**, Indian Statistical Institute, Kolkata, India
- 2007– 2010, **Bachelor of Statistics (B.Stat.), Ranked 3rd**, Indian Statistical Institute, Kolkata, India
- Certified Short Courses/Trainings:
 - “Mediation analysis using R” (2018), led by Prof. Theis Lange, **University of Copenhagen, Denmark**, & Prof. Stijn Vansteelandt, **Ghent University, Belgium**.
 - “Sparse Regression” (2016), CRISM Master Class, **University of Warwick, UK**.
 - “Multilevel and Longitudinal Modeling” (2016), led by Prof. Sophia Rabe-Hesketh, **University of California, Berkeley**, & Prof. Anders Skrondal, **CEMO & Norwegian Institute of Public Health & University of California, Berkeley**.

Employments:

1. Indian Statistical Institute, Interdisciplinary Statistical Research Unit, Kolkata, **India**.
 - Associate Professor: 2022 – Present.
 - Assistant Professor: 2018 – 2021.
 - INSPIRE Faculty: 2016 – 2018.
2. University of Oslo, Department of Bio-Statistics, Institute of Basic Medical Sciences, **Norway**.
 - Post-Doctoral Research Fellow: 2016 – 2017.
3. Industry Experiences:
 - Assistant Manager – Financial Service Analytics (2014 –2015), **Genpact**, Kolkata, India.
 - Research Manager – Quantitative Modelling (2013 –2014), **IMRB International**, Kolkata, India
 - Associate Research Manager – Quantitative Modelling (2012 –2013), **IMRB International**, India

Research Interests:

- Robust Statistics - theory and applications, Robust Bayesian Inference, Data robustness
- Minimum Distance Inference, Density Based Divergences & their use in statistical inferences
- Entropy, Relative Entropy and their applications in statistics, physics and information theory
- High-Dimensional Statistics & Mixed Models, Robustness in high-dimension
- Biostatistical problems & applications, Robust bioinformatics

Awards & Achievements:

International Awards:

- 2017: Received the 2017 **ISCB Conference Awards for Scientists (CASC)**, among biostatisticians from the countries underdeveloped in clinical biostatistics, given by *International Society for Clinical Biostatistics (ISCB)*.
- 2013: Received the **Jan Tinbergen Award (1st place)**, among Young Statisticians from Developing Countries, given by *International Statistical Institute (ISI)*.

National Awards:

- 2019: Received the **NASI-Young Scientist Platinum Jubilee Award (2019)** in the field of Earth Science, Mathematics and Physics, given by the *National Academy of Sciences, India (NASI)*.
- 2018: Received the **Haldane Memorial Prize: 2017-2018**, for the best research work done in India in Medical Statistics, Biostatistics and related fields including Bioinformatics, given by *Indian Statistical Institute (ISI)*.
- 2017: Received the **Prof. A. M. Mathai Award**, for the best research paper published in 2016 in the area of Applicable Mathematics, given by *Indian Mathematical Society (IMS)*.
- 2017: Received the **Bose-Nandi Young Statistician Award (1st Place)** given by *Calcutta Statistical Association (CSA)*, Kolkata, India.
- 2016: Received the **ISCA Young Scientist Award** in the section of Mathematical Sciences (including Statistics) given by *Indian Science Congress Association (ISCA)*, a professional body under *Department of Science & Technology, Ministry of Science & Technology, Government of India*.
- 2015: Received the **Prof. A. R. Kamat Award for the Best Ph.D. Thesis in Statistics** among Indian passport holders instituted by *Indian Society of Probability and Statistics (ISPS)*.
- 2014: Received the **Best Paper Award** in the session "Fishing in troubled waters" in the 24th Annual Seminar of *The Market Research Society of India (MRSI)*.
- 2012: Received the **ISIAA - Mrs. M. R. Iyer Memorial Gold Medal Award** for outstanding performance in the M. Stat. 2010-12.
- 2012: Received the **TCS Best Project Award** for the final Semester project of M. Stat. 2010-12 from *Indian Statistical Institute, India*.
- 2010: Received the **D. Basu Memorial Gold Medal Award** for outstanding performance in B. Stat. 2007-10.

International Travel Awards/Funding:

- 2019: Received an **ADB Travel Funding** to attend 62nd ISI World Statistics Congress 2019 in Malaysia (18-23 August), given by the *Asian Development Bank (ADB)*.
- 2018: Received an **IMS New Researcher Travel Award** to attend 2018 Stochastic Processes & their Applications Meeting in Sweden (11-15 June), given by *Institute of Mathematical Statistics (IMS)*.
- 2018: Received an **IBS Travel Award** to attend the 2018 International Biometric Conference in Spain (8-13 July), given by *International Biometric Society (IBS)*.

National Fellowship/Scholarship:

- 2012: Selected for the **Shyama Prasad Mukherjee (SPM) Fellowship 2012** in Mathematical Sciences from *Council of Scientific & Industrial Research (CSIR)*, India, for pursuing Ph.D.
- 2010: Received the **NBHM Post Graduate (M.A. / M.Sc.) Scholarship** in Mathematics from *National Board of Higher Mathematics (NBHM)*, India, for pursuing Post graduate studies.
- 2011: **Ranked 2nd (All-India) in CSIR-UGC NET Exam**, December 2011 in Mathematical Sciences.

Research Grant/Projects:

Ongoing:

1. **Principal Investigator:** “*Comparative Integrations of Robust Statistical and Machine Learning Methodologies*” (2023–26), Internal Research Grant, **Indian Statistical Institute**, India.
Total Budget (for the first year): Rs. 3,50,000/-.

Completed:

2. **Principal Investigator:** “*Robust minimum divergence inferences for Non-Standard data problems: Emphasis on Censored, Longitudinal & High-dimensional data and Machine Learning & Multisample set-ups*” (2016–22), INSPIRE Faculty Research Grant, **Department of Science & Technology (DST), Govt. of India**, India. Total Budget: Rs. 35,00,000/-.
3. **Principal Investigator:** “*Robust Statistical Learning for High-dimensional Biomedical and Omics data*” (2020–23), Start-Up Research Grant, **Science and Engineering Research Board (SERB), DST, Government of India**, India. Total Budget: Rs. 15,32,916/-.
4. **Principal Investigator (2022 – 2023) and Co-Principal Investigator (2019-2023):** “*Unravelling the interdisciplinary facets of physics and data sciences in real life socio-economic challenges*” (2019–23), Core Research Grant, **Science and Engineering Research Board (SERB), DST, Govt. of India**, India.
PI for 2019-2022: Prof. Banasri Basu, Indian Statistical Institute, India.
Total Budget: Rs. 21,19,546/-
5. **Co-Principal Investigator:** “*Applied Statistical Problems for Dependent Incomplete Multidimensional Data*” (2021–23), Joint India-Uzbekistan Research Grant, **Department of Science & Technology (DST), Govt. of India**, and **Ministry of Innovative Development of the Republic of Uzbekistan**.
PI: Prof. Ayanendranath Basu, Indian Statistical Institute, India, and Dr. Abdushukurov Abdurakhim, Moscow State University, Tashkent Branch, Tashkent, Uzbekistan
Total Budget (for 2 years): Rs. 15,85,000/-
6. **Principal Investigator:** “*Outlier-Robust Methods in Biostatistics and Bioinformatics using Density Power Divergence*” (2020–23), Internal Research Grant, **Indian Statistical Institute**, India.
Total Budget: Rs. 11,31,000/-.
7. **Principal Investigator:** “*Robust minimum divergence inferences for biostatistics and bioinformatics*” (2018–19), Start-up Grant, **Indian Statistical Institute**, India.
Total Budget: Rs. 4,36,000/-.
8. **Member:** “*Robust estimation and testing for high-dimensional data based on density power divergence*” (2019–21), PGC2018-095194-B-I00, **Ministerio de Ciencia, Innovacion y Universidades**, Spain.
PI: Prof. Leandro Pardo, Complutense University of Madrid, Spain.

Publication Summary & Statistics:

Number of Invited Book Chapters: Three [2022, 2022, 2013]

Number of Journal Publications: [Total 65]

SCI/SCIE Journals: Statistical Theory & Methods:

Statistica Sinica: Three [2022, 2021, 2018]

Journal of Multivariate Analysis: Two [2022, 2016]

Journal of Business & Economic Statistics: One [2022]

Scandinavian Journal of Statistics: One [2023]

IEEE Transactions on Information Theory: Three [2021, 2020, 2018]

Electronic Journal of Statistics: Three [2017, 2015, 2013]

Advances in Data Analysis and Classification: One [2021]

Annals of the Institute of Statistical Mathematics: Two [2019, 2016]

AStA Advances in Statistical Analysis: Three [2024, 2018, 2016]

Journal of Statistical Planning and Inference: One [2015]

Mathematics and Computers in Simulation: One [2015]

Statistical Methods & Applications: Two [2020, 2017]

Journal of Applied Statistics: Two [2022, 2015]

Journal of Statistical Computation and Simulation: Two [2024, 2018]

Statistics and Probability Letters: Three [2023, 2019, 2016]

Communications in Statistics - Theory and Methods: One [2023]

Bernoulli Journal: One [2017]

Pattern Recognition: Two [2021, 2021]

TEST: Three [2022, 2020, 2016]

Entropy: Two [2023, 2018]

Metrika: One [2018]

Statistical Papers: Two [2024, 2017]

Statistica Neerlandica: One [2021]

Statistics: One [2017]

SCI/SCIE Journals: Biostatistics & Biological/Medical Applications:

Biometrics: One [2018]

Statistics in Medicine: Two [2021, 2019]

Statistical Methods in Medical Research: Two [2021, 2019]

Genome Research: One [2021]

Briefings in Bioinformatics: One [2022]

International Journal of Biostatistics: One [2018]

Environmental Science and Pollution Research: One [2023]

International Journal of Food Sciences and Nutrition: One [2018]

SCI/SSCI Journals: Social Science Applications:

Physica A- Statistical Mechanics and its Applications: Three [2021, 2019, 2011]

Socio-Economic Planning Sciences: One [2022]

The European Physical Journal B: One [2024]

Emerging Sources Citation Index Journals:

Sankhya A & B: Two [2024+, 2015]

Econometrics and Statistics: One [2023+]

Journal of Statistical Theory and Practice: One [2022]

Other Journals: Two [2023, 2009]

Citation measures according to Google Scholar: [as on 04.04.2024]

No. of Citations: 1059

h-Index: 17

i10-Index: 34

Detailed List of Publications:

*Graduate/Masters/Research students working under my (or other coauthor's) supervision at the time of the work.

(†) Author list is in alphabetical order of Surnames (as per the requirement from co-authors and/or their institute)

A. Invited Book Chapters

1. Robustness Concerns in High-dimensional Data Analysis and Potential Solutions (2022). Abhik Ghosh. In: *Big Data Analytics in Chemoinformatics and Bioinformatics (with applications to computer-aided drug design, cancer biology, emerging pathogens and computational toxicology)*, S. C. Basak and M. Vracko, Eds., Elsevier.
2. On Entropy based Diversity Measures: Statistical Efficiency and Robustness Considerations (2022). Abhik Ghosh and Ayanendranath Basu. In: *Trends in Mathematical, Information and Data Sciences: A Tribute to Leandro Pardo, 199-211*, N. Balakrishnan, M. Á. Gil, N. Martín, D. Morales, M. C. Pardo, Eds., Springer.
3. Robust inference based on divergences in Reliability Systems (2013). Abhik Ghosh, Avijit Maji* and Ayanendranath Basu. *Applied Reliability Engineering and Risk Analysis – Probabilistic Models and Statistical Inference, 290-307*, I. Frenkel, A. Karagrignoriou, A. Lisnianski and A. Kleyner, Eds. Dedicated to the Centennial of the birth of Boris Gnedenko, Wiley, NY, USA.

B. Peer-Reviewed Journal Publications/Accepted Papers

1. Robust Estimation of Average Treatment Effects from Panel Data (2024). Sayoni Roychowdhury*, Indrila Ganguly* and Abhik Ghosh. *Statistical Papers*, 65(1), 139 – 179.
2. Robust adaptive variable selection in ultra-high dimensional regression models (2024). Abhik Ghosh, Maria Jaenada* and Leandro Pardo. *Journal of Statistical Computation and Simulation*, doi: 10.1080/00949655.2023.2262669.
3. Multi-scale analysis of rural and urban areas: a case study of Indian districts (2024). Abhik Ghosh, Souvik Chattopadhyay*, and Banasri Basu. *The European Physical Journal B*, 97, 12.
4. Robust statistical modeling of monthly rainfall: The minimum density power divergence approach (2024). Arnab Hazra and Abhik Ghosh. *Sankhya B*, doi: 10.1007/s13571-024-00324-0.
5. Robust Estimation of fixed effect parameters and variances of Linear Mixed Models: The Minimum Density Power Divergence Approach (2024). Giovanni Saraceno*, Abhik Ghosh, Ayanendranath Basu and Claudio Agostinelli. *ASTA Advances in Statistical Analysis*, 108, 127-157.
6. Robust Clustering with Normal Mixture Models: A Pseudo β -Likelihood Approach (2023+). Soumya Chakraborty*, Ayanendranath Basu, Abhik Ghosh. *Econometrics and Statistics*, doi:10.1016/j.ecosta.2023.10.004.
7. Optimal Guessing under Nonextensive Framework and associated Moment Bounds (2023). Abhik Ghosh. *Statistics and Probability Letters*, 197, 109812.
8. Robust sure independence screening for non-polynomial dimensional generalized linear models (2023). Abhik Ghosh, Erica Ponzi, Torkjel Sandanger and Magne Thoresen. *Scandinavian Journal of Statistics*, 50(3), 1232 – 1262.
9. Meta-analyses of arsenic accumulation in Indica and Japonica rice grains (2023). Susmita Das, Abhik Ghosh, Michael A. Powell and Pabitra Banik. *Environmental Science and Pollution Research*, 30(20), 58827 – 58840.
10. Robust Estimation of Pareto-Type Tail Index through an Exponential Regression Model (2023). Richard Minkah, Tertius de Wet and Abhik Ghosh. *Communications in Statistics - Theory and Methods*, 52(2), 478 – 497.

11. Robust Minimum Divergence Estimation for the Multinomial Circular Logistic Regression Model (2023). Elena Castilla and Abhik Ghosh. *Entropy*, 25(10), 1422.
12. Robust extreme quantile estimation for Pareto-type tails through an exponential regression model (2023). Richard Minkah, Tertius de Wet, Abhik Ghosh and Haitham M. Yousof. *Communications for Statistical Applications and Methods*. 30, 531 – 550.
13. Classification of COVID19 patients using robust logistic regression (2022). Abhik Ghosh, Maria Jaenada and Leandro Pardo. *Journal of Statistical Theory and Practice*, 16(4), 67.
14. Robust Parametric Inference for Finite Markov Chains (2022). Abhik Ghosh, *TEST*, 31(1), 118–147.
15. sc-REnF: An entropy guided robust feature selection for single-cell RNA-seq data (2022). Snehalika Lall*, Abhik Ghosh, Sumanta Ray and Sanghamitra Bandyopadhyay. *Briefings in Bioinformatics*, 23(2), bbab517.
16. Robust Inference for Skewed data in Health Science (2022). Amarnath Nandy*, Ayanendranath Basu and Abhik Ghosh. *Journal of Applied Statistics*, 49(8), 2093 – 2123.
17. A Robust Generalization of the Rao Test (2022). Ayanendranath Basu, Abhik Ghosh, Nirian Martin and Leandro Pardo. *Journal of Business & Economic Statistics*, 40(2), 868 – 879 (+)
18. Strata-based Quantification of Distributional Uncertainty in Socio-Economic Indicators: A Comparative Study of Indian States (2022). Abhik Ghosh, Olivia Mallick*, Souvik Chatterjee* and Banasri Basu. *Socio-Economic Planning Sciences*, 81, 101207.
19. General Robust Bayes Pseudo-Posteriors: Exponential Convergence results with Applications (2022). Abhik Ghosh, Tuhin Majumder* and Ayanendranath Basu. *Statistica Sinica*, 32(2), 787 – 823.
20. Robust density power divergence based tests in multivariate analysis: A comparative overview of different approaches (2022). Ayanendranath Basu, Soumya Chakraborty, Abhik Ghosh and Leandro Pardo. *Journal of Multivariate Analysis (50th Anniversary Jubilee Volume)*, 188 (March), 104846. (+)
21. A robust variable screening procedure for ultra-high dimensional data (2021). Abhik Ghosh and Magne Thoresen. *Statistical Methods in Medical Research*, 30(8), 1816 – 1832.
22. Modeling expression ranks for noise-tolerant differential expression analysis of scRNA-seq data (2021). Krishan Gupta*, Manan Lalit*, Aditya Biswas*, Ujjwal Maulik, Sanghamitra Bandyopadhyay, Gaurav Ahuja, Abhik Ghosh and Debarka Sengupta. *Genome Research*, 31 (Apr.), 689 – 697.
23. Consistent Fixed-Effect Selection in Ultra-high dimensional Linear Mixed Models with Error-Covariate Endogeneity (2021). Abhik Ghosh and Magne Thoresen. *Statistica Sinica*, 31(4), 2073 – 2102.
24. Robust semiparametric inference for polytomous logistic regression with complex survey design (2021). Elena Castilla*, Abhik Ghosh, Nirian Martin and Leandro Pardo. *Advances in Data Analysis and Classification*, 15, 701 – 734. (+)
25. Robust Generalized Quadratic Discriminant Analysis (2021). Abhik Ghosh, Rita SahaRay, Sayan Chakraborty* and Sayan Bhadra*. *Pattern Recognition*, 117 (Sept.), 107981.
26. Stable Feature Selection using Copula based Mutual Information (2021). Snehalika Lall*, Debajyoti Sinha, Abhik Ghosh, Debarka Sengupta and Sanghamitra Bandyopadhyay. *Pattern Recognition*, 112 (Apr.), 107697.
27. Maximum Entropy Framework for a Universal Rank Order distribution with Socio-economic Applications (2021). Abhik Ghosh, Preety Shreya* and Banasri Basu. *Physica A-Statistical Mechanics and its Applications*, 563 (Feb.), 125433.

28. A non-parametric two-sample test using a general φ -divergence based mutual information (2021). Apratim Guha, Atanu Biswas and Abhik Ghosh. *Statistica Neerlandica*, 75(2), 180 – 202.
29. A Scale-Invariant Generalization of the Rényi Entropy, Associated Divergences and Their Optimizations under Tsallis' Nonextensive Framework (2021). Abhik Ghosh & Ayanendranath Basu. *IEEE Transactions on Information Theory*, 67(4), 2141 - 2161.
30. Robust Wald-Type Tests under Random Censoring (2021). Abhik Ghosh, Ayanendranath Basu and Leandro Pardo. *Statistics in Medicine*, 40(5), 1285–1305.
31. Robust Wald-type Test in GLM with Random Design based on Minimum Density Power Divergence Estimators (2021). Ayanendranath Basu, Abhik Ghosh, Abhijit Mandal, Nirian Martin, Leandro Pardo. *Statistical Methods & Applications*, 30, 973–1005. (†)
32. Ultrahigh-dimensional Robust and Efficient Sparse Regression using Non-Concave Penalized Density Power Divergence (2020). Abhik Ghosh and Subhabrata Majumdar. *IEEE Transactions on Information Theory*, 66(12), 7812-7827.
33. Comments on "On Active Learning Methods for Manifold Data" (2020). Abhik Ghosh. *TEST*, 29, 34 – 37 (Invited discussion).
34. Universal city-size distributions through rank ordering (2019). Abhik Ghosh and Banasri Basu. *Physica A-Statistical Mechanics and its Applications*, 528, 121094.
35. Robust Inference under the Beta Regression Model with Application to Health Care Studies (2019). Abhik Ghosh. *Statistical Methods in Medical Research*, 28(3), 871 – 888.
36. Robust and Efficient Estimation in the Parametric Proportional Hazards Model under Random Censoring (2019). Abhik Ghosh and Ayanendranath Basu. *Statistics in Medicine*, 38 (27), 5283 – 5299.
37. Robust Statistical Inference Based on the C-Divergence Family (2019). Avijit Maji*, Abhik Ghosh, Ayanendranath Basu and Leandro Pardo. *Annals of the Institute of Statistical Mathematics*, 71(5), 1289 – 1322.
38. Power and Level Robustness of a Test for Composite Hypotheses under Independent Non-Homogeneous Data (2019). Abhik Ghosh and Ayanendranath Basu. *Statistics and Probability Letters*, 148, 35 – 42.
39. New robust statistical procedures for polytomous logistic regression models (2018). Elena Castilla*, Abhik Ghosh, Nirian Martin and Leandro Pardo. *Biometrics*, 74(4), 1282 – 1291. (†)
40. A New Class of Robust Two-Sample Wald-Type Tests (2018). Abhik Ghosh, Nirian Martin, Ayanendranath Basu, Leandro Pardo. *International Journal of Biostatistics*, 14(2), 20170023.
41. Robust Bounded Influence Tests for Independent but Non-Homogeneous Observations (2018). Abhik Ghosh and Ayanendranath Basu. *Statistica Sinica*, 28, 1133 – 1155.
42. A New Family of Divergences Originating from Model Adequacy Tests and Application to Robust Statistical Inference (2018). Abhik Ghosh and Ayanendranath Basu. *IEEE Transactions on Information Theory*, 64(8), 5581 – 5591.
43. A Generalized Relative (α, β)-Entropy from Robust Statistical Divergence: Properties and Applications (2018). Abhik Ghosh and Ayanendranath Basu. *Entropy*, 20(5), 347.
44. Improvements in the Small Sample Efficiency of the Minimum S-Divergence Estimators under Discrete Models (2018). Abhik Ghosh and Ayanendranath Basu. *Journal of Statistical Computation and Simulation*, 88(3), 511 – 532.
45. Robust Wald-type tests for non-homogeneous observations based on minimum density power divergence estimator (2018). Ayanendranath Basu, Abhik Ghosh, Nirian Martin and Leandro Pardo. *Metrika*, 81(5), 493 – 522. (†)

46. Non-Concave Penalization in Linear Mixed-Effect Models and Regularized Selection of Fixed Effects (2018). Abhik Ghosh and Magne Thoresen. *AStA Advances in Statistical Analysis*, 102(2), 179 – 210.
47. Consumption of Fruitflow® lowers blood pressure in pre-hypertensive males: A randomized, placebo controlled, double blind, cross-over study (2018). Main Uddin*, Dipankar Biswas*, Abhik Ghosh, Niamh O’Kennedy and Asim K. Duttaroy. *International Journal of Food Sciences and Nutrition*, 69(4), 494 – 502.
48. A Generalized Divergence for Statistical Inference (2017). Abhik Ghosh, Ian R. Harris, Avijit Maji, Ayanendranath Basu and Leandro Pardo. *Bernoulli Journal*, 23(4A), 2746 – 2783.
49. A Wald-type test statistic for testing linear Hypothesis in logistic regression models based on minimum density power divergence estimator (2017). Ayanendranath Basu, Abhik Ghosh, Abhijit Mandal, Nirian Martin, Leandro Pardo. *Electronic Journal of Statistics*, 11, 2741-2772. (†)
50. Robust and Efficient Parameter Estimation based on Censored Data with Stochastic Covariates (2017). Abhik Ghosh and Ayanendranath Basu. *Statistics*, 51(4), 801-823.
51. Divergence based Robust Estimation of the Tail Index with Exponential Regression Model (2017). Abhik Ghosh. *Statistical Methods & Applications*, 26(2), 181 – 213.
52. The Minimum S-Divergence Estimator in Continuous Models: The Basu-Lindsay Approach (2017). Abhik Ghosh and Ayanendranath Basu. *Statistical Papers*, 58(2), 341 – 372.
53. Testing Composite Null Hypotheses based on S-Divergences (2016). Abhik Ghosh and Ayanendranath Basu. *Statistics and Probability Letters*, 114, 38 – 47.
54. Influence Analysis of Robust Wald-type Tests (2016). Abhik Ghosh, Abhijit Mandal, Nirian Martin and Leandro Pardo. *Journal of Multivariate Analysis*, 147, 102 – 126. (†)
55. The Logarithmic Super Divergence and Asymptotic Inference Properties (2016). Avijit Maji*, Abhik Ghosh & Ayanendranath Basu. *AStA Advances in Statistical Analysis*, 100(1), 99 – 131.
56. Robust Bayes Estimation using the Density Power Divergence (2016). Abhik Ghosh and Ayanendranath Basu. *Annals of the Institute of Statistical Mathematics*, 68(2), 413 – 437.
57. Robust Estimation in Generalized Linear Models: The Density Power Divergence Approach (2016). Abhik Ghosh and Ayanendranath Basu. *TEST*, 25(2), 269 – 290.
58. Influence Function Analysis of the Restricted Minimum Divergence Estimators: A General Form (2015). Abhik Ghosh. *Electronic Journal of Statistics*, 9, 1017 – 1040.
59. On the robustness of a divergence based test of simple statistical hypotheses (2015). Abhik Ghosh, Ayanendranath Basu & Leandro Pardo. *Journal of Statistical Planning & Inference*, 161, 91–108.
60. Robust Estimation for Non-Homogeneous Data and the Selection of the Optimal Tuning Parameter: The DPD Approach (2015). Abhik Ghosh and Ayanendranath Basu. *Journal of Applied Statistics*, 42(9), 2056 – 2072.
61. Monte Carlo Comparison of Tests of Exponentiality against NWBUE Alternatives (2015). Md. Zafar Anis and Abhik Ghosh. *Mathematics and Computers in Simulation*, 115, 1 – 11.
62. Asymptotic Properties of Minimum S-Divergence Estimator for Discrete Models (2015). Abhik Ghosh. *Sankhya A - The Indian Journal of Statistics*, 77(2), 380 – 407.
63. Robust Estimation for Independent but Non-Homogeneous Observations using Density Power Divergence with application to Linear Regression (2013). Abhik Ghosh and Ayanendranath Basu. *Electronic Journal of statistics*, 7, 2420 – 2456.

64. Consumer Expenditure Distribution in India, 1983-2007: Evidence of a Long Pareto Tail (2011). Abhik Ghosh, Kausik Gangopadhyay and Banasri Basu. *Physica A-Statistical Mechanics and its Applications*, 390(1), 83 – 97.
65. A Quantile-based method for association mapping of quantitative phenotypes: an application to rheumatoid arthritis phenotypes (2009). Saurabh Ghosh, Krishna R. Sanapala, Abhik Ghosh and Sujatro Chaklader. *BMC Proceedings*, 3(7), 2009: **Genetic Analysis Workshop 16** (St Louis, MO, USA, September, 2008).

C. Papers Under Review/Communicated [Available in ArXiv]

66. Conditional variable screening for ultra-high dimensional longitudinal data with time interactions. Andrea Bratsberg*, Abhik Ghosh and Magne Thoresen.
67. Exponential Consistency of M-estimators in Generalized Linear Mixed Models. Andrea M. Bratsberg*, Magne Thoresen and Abhik Ghosh.
68. On regularization methods based on Renyi's pseudodistances for sparse high-dimensional linear regression models. Elena Castilla*, Abhik Ghosh, Maria Jaenada* and Leandro Pardo. (†)
69. Robust adaptive Lasso in high-dimensional logistic regression. Ayanendranath Basu, Abhik Ghosh, Maria Jaenada and Leandro Pardo. (†)
70. Robust and Efficient Estimation for Ordinal Response Models using Density Power Divergence. Arijit Pyne*, Subhrajyoti Roy*, Abhik Ghosh and Ayanendranath Basu.
71. Breakdown Point Analysis of the Minimum S-Divergence Estimator. Subhrajyoti Roy*, Abir Sarkar*, Abhik Ghosh and Ayanendranath Basu.
72. rSVDdpd: A Robust Scalable Video Surveillance Background Modelling Algorithm. Subhrajyoti Roy*, Ayanendranath Basu, and Abhik Ghosh
73. Analysis of the rSVDdpd Algorithm: A Robust Singular Value Decomposition Method using Density Power Divergence. Subhrajyoti Roy*, Abhik Ghosh, Ayanendranath Basu
74. Robust and Efficient Parameter Estimation for Discretely Observed Stochastic Processes. Rohan Hore* and Abhik Ghosh.
75. Robust Genomic Prediction and Heritability Estimation using Density Power Divergence. Upama Paul Chowdhury*, Susmita Das and Abhik Ghosh
76. Existence and Consistency of the Maximum Pseudo β -Likelihood Estimators for Multivariate Normal Mixture Models. Soumya Chakraborty*, Ayanendranath Basu, Abhik Ghosh.
77. Robust inference for linear regression models with possibly skewed error distribution. Amarnath Nandy*, Ayanendranath Basu and Abhik Ghosh

D. ArXived Pre-prints

78. Estimating Copula and Test of Independence based on a generalized framework of all rank-based Statistics in Bivariate Sample. Abhik Ghosh and Aritra Chakravorty (2013, *ArXived*)
79. A Model Explaining Correlation between Observed Values in Contingency Tables. Abhik Ghosh, Samit Roy, Sujatro Chaklader (2013, *ArXived*)
80. The Logarithmic Super Divergence and its use in Statistical Inference. Avijit Maji, Abhik Ghosh and Ayanendranath Basu (2014, *ArXived*)
81. Robust Estimation of Bivariate Tail Dependence Coefficient. Abhik Ghosh. (2015, *ArXived*)

82. Theoretical Properties of a New Weighted Likelihood Estimator for Right Censored Data. Adhived Biswas*, Pratim Guha Niyogi*, Suman Majumder*, Subir K. Bhandari, Abhik Ghosh and Ayanendranath Basu. (2018, *ISI ISRU Technical report*)
83. On Robust Pseudo-Bayes Estimation for the Independent Non-homogeneous Set-up. Tuhin Majumder*, Ayanendranath Basu and Abhik Ghosh. (2019, *ArXived*)
84. Robust Hypothesis Testing and Model Selection for Parametric Proportional Hazard Regression Models. Amarnath Nandy*, Abhik Ghosh, Ayanendranath Basu, Leandro Pardo. (2020, *ArXived*)
85. RaJIVE: Robust Angle Based JIVE for Integrating Noisy Multi-Source Data. Erica Ponzi, Magne Thoresen, and Abhik Ghosh (2021, *ArXived*; R package available in CRAN at <https://CRAN.R-project.org/package=RaJIVE>)

E. Papers Under Preparations/Works in progress

86. On Robustness of Statistical Inference based on the Logarithmic Super Divergence Family. Avijit Maji, Abhik Ghosh and Ayanendranath Basu.
87. Estimation and model selection via Hyvarian score. Abhik Ghosh and Nils Hjort.
88. A Scalable Robust Estimation Procedure for Multivariate Location and Scatter. Soumya Chakraborty*, Ayanendranath Basu and Abhik Ghosh.
89. A Robust and Efficient Differentially Expressed Gene Detector for microarray data modelled by Skew-normal distributions. Amarnath Nandy* and Abhik Ghosh

F. Book Reviews

1. Reviews of the following books for *International Society for Clinical Biostatistics Newsletters*:
 - “*Bayesian Regression Modeling with INLA*” by X. Wang, Y. Yue and J. J. Faraway. [Vol. 67, 2019]
 - “*Clinical Trial Data Analysis Using R & SAS*” by D. Chen, K. E. Peace & P. Zhang. [Vol. 66, 2018]
 - “*Clinical Trial Biostatistics and Biopharmaceutical Applications*”, Ed. by W.R. Young, D.(D.) Chen. [Vol. 65, 2018]
 - “*Statistical Learning from a Regression Perspective*”, by R. A. Berk. [Vol. 64, 2017]
 - “*Analysis of Mixed Data: Methods & Applications*”, Ed. by A. R. de Leon and K. C. Chough [Vol. 62, 2016].

G. Development of Computer Software/Packages:

1. **dpdSIS**. An R package published in *GitHub* at <https://github.com/abhianik/dpdSIS>.
2. **RaJIVE**. An R package published in *CRAN* at <https://CRAN.R-project.org/package=RaJIVE>. Jointly with Erica Ponzi.
3. **ROSeq**. An R package published in *Bioconductor* at <https://doi.org/doi:10.18129/B9.bioc.ROSeq>. Jointly with Krishan Gupta, Manan Lalit, Aditya Biswas and Debarka Sengupta.

Editorial Activities:

- **Editorial Board Member** of the following journals:
 - *Entropy*, as a **Guest Editor** for a special issue (2022 – 2024)
 - *Sankhya, Series A and B*, as a **Technical Editor** (2019 – present)
 - *Food & Nutrition Research*, as the **Statistical Advisor** (2016–2017).

- Member of the **Topical Advisory Panel** of the journal *Entropy* (2022 – present)
- **Reviewer** in *Mathematical Reviews (MathSciNet)*, an online publication of the **American Mathematical Society** (May, 2016 – present).
- **Reviewed papers** for several major Statistics and applied journals including
 - Journal of the American Statistical Association, American Statistician, Scandinavian Journal of Statistics, TEST, Annals of the Institute of Statistical Mathematics, Australian & New Zealand Journal of Statistics, Statistics, Journal of Applied Statistics, Electronic Journal of Statistics, Food & Nutrition Research etc.

Research Guidance:

- **PhD Supervisions:**

1. Krishan Gupta (2017 - 2021), IIIT Delhi, India. Jointly with Prof. Debarka Sengupta.
 2. Andrea Mathisen Bratsberg (2021-2024), University of Oslo, Norway. Jointly with Prof. Magne Thoresen and Prof. Manuela Zucknick.
 3. Arijit Pyne (2018 - Ongoing).
 4. Soumya Chakrabarti (2018 – Ongoing).
 5. Amarnath Nandy (2019 – Ongoing).
 6. Subhrajyoti Roy (2021 – Ongoing).
 7. Suryasis Jana (2022 – Ongoing), Indian Statistical Institute, Kolkata, India.
- } Jointly with Prof. Ayanendranath Basu.
Indian Statistical Institute, Kolkata, India

- **Full Semester Masters projects/Dissertations (Credit): @Indian Statistical Institute, Kolkata, India**

1. Abir Sarkar (Spring, 2023)
2. Rohan Hore, M. Stat. (Spring, 2020)
3. Anwesha Chakravarti, M. Stat. (Spring, 2020)
4. Chirayata Kushari, M. Stat. (Spring, 2019)
5. Aindrila Datta, M. Stat. (Spring, 2019)
6. Debojyoti Saha, M. Stat. (Spring, 2019)
7. Indrila Ganguly, M. Stat. (Spring, 2019)

- **Project-Linked Personnel: @Indian Statistical Institute, Kolkata, India**

1. Shuvrarghya Ghosh (2022-23)
2. Upama Paul Chowdhury (2021-23)
3. Debika Ghosh (2021-22)
4. Aritra Banerjee (2020–21)
5. Sayoni Roychowdhury (2020–21)
6. Aniket Das (2018–19)

- **Additional Summer/ Winter Projects (Non-credit) guided for the students of:**

1. Indian Statistical Institute (8+ students)
2. University of Kalyani (8+ students)
3. Indian Institute of Technology (IIT) Kanpur (3 students)
4. National Institute of Technology (NIT) Rourkela (1 student)

Teaching Experiences:

- Full Semester Courses in *Indian Statistical Institute*, Kolkata, India.
 1. “*Survival Analysis*” (M. Stat. II) [Spring, 2018, 2020, 2021, 2022, 2023, 2024]
 2. “*Life Contingency*” (M. Stat. II) [Autumn, 2022, 2023]
 3. “*Data Analytics and Experimental Design*” (PGD-ARSMA) [Spring, 2021]
 4. “*Asymptotic Theory of Inference*” (M. Stat. II) [Autumn, 2017, 2021]
 5. “*Parametric Inference*” (B. Stat. III) [Autumn, 2020]
 6. “*Design of Experiments*” (B. Stat. III) [Spring, 2019]
 7. “*Statistical Inference II*” [*Bayesian Inference*] (M. Stat. II) [Autumn, 2019]
 8. “*Statistical Inference I*” [*Decision theory*] (M. Stat. I) [Autumn, 2018]
 9. “*Robust Statistics*” (M. Stat. II) [Spring, 2017]

- Short Courses/Workshops:
 1. **3-Day Short-Course on “Robust Statistical Inference for High-Dimensional Data”** (30 November – 02 December, 2022), University of Trento, **Italy**.
 2. “*Categorical Data Analyses 1 & 2 (with R)*” in the **Instructional School for Teachers (IST)** (July, 2022), Indian Statistical Institute, Kolkata, India.
 3. “*Survival Analyses*” in **Workshop on Computational Statistics & Data Analytics** (March, 2022), Interdisciplinary Statistical Research Unit, Indian Statistical Institute, India.
 4. **4-Day Short-Course on “Robust Procedures for High Dimensional Data”** (19-22 April, 2021), Complutense University of Madrid, **Spain** (via Online Mode).
Repeated again from November 29 – December 2, 2021.
 5. “*Regression Modelling*” in **A Short Course on Machine Learning for Practitioners** (November, 2019), Centre for Artificial Intelligence and Machine Learning (CAIML), Indian Statistical Institute, Kolkata, India.
 6. “*Basic Multivariate Analysis and visualizations*” in **Workshop on Data Science Using R** (December, 2018), Indraprastha Institute of Information Technology, Delhi, India.
 7. “*Introduction to R*” and “*Basic Multivariate Analysis*” in **Workshop on Business Statistics** (December, 2016), Indian Statistical Institute North-east center, Tezpur, India.
 8. “*Probability and Random variable*” and “*Statistical Inference*” in **North-East Winter School on Genetic Analyses of Complex Traits** (December, 2016), Dibrugarh University, India.
 9. “*Basic Multivariate Analysis*” in the Inaugural **Symposium XPLORE** on Machine Learning, Artificial Intelligence, & Big Data Analysis (February, 2017), RCC Institute of Information Theory, Kolkata, India.
 10. “*Regression Modelling: Beginning of Machine learning*” in the **Faculty Development Program** on Advanced Data Mining for Big Data Analysis (March, 2017), RCC Institute of Information Theory, Kolkata, India.

- External Examiner for the following PhD course exams in **University of Oslo**, Norway:
 - STK 9051SP: *Statistical Inference via Minimum Divergence Methods* (Spring, 2016)
 - STK 9101SP: *Probability, Measure, Large-Sample Theory* (Spring, 2016)

- Industry Training Programs/Workshops in Genpact and IMRB international (2012 – 2015)
 - *Time Series – Basic techniques, Time Series – Advance Module (ARMA & ARIMA), Latent Class Clustering with applications & Interpretations, Data Visualizations – Correspondence Analysis,*

Institutional Responsibilities (Academic Administration):

- **Deputy Head**, *Cell for Cooperation with Academia, Industry and Research Labs (C-CAIR)*, Indian Statistical Institute, Kolkata, India (2022 – present).
- **Coordinator** (2022 – present) and **Associate Member** (2019 – present), *Centre for Artificial Intelligence and Machine Learning (CAIML)*, Indian Statistical Institute, Kolkata, India.
- **Associate Member** (2023 – present), *Technology Innovation Hub (TIH) on Data Science*, Indian Statistical Institute, Kolkata, India.
- **Elected Member** of *Academic Council*, Indian Statistical Institute (for the term 2022-2024).
- **Convener** of the following committees in Indian Statistical Institute (ISI):
 - Research Fellow Advisory Committee (RFAC), Applied Statistics Division [2023 – present; 2019–2020]
 - M. Stat. Project supervision Committee [2023, 2019]
 - PCM Gold Medal Award Committee [2022]
 - Course & Syllabus Review Committee for Ph.D. in Statistics [2021-2022]
 - ISI Admission Committee for JRF in Statistics [2020, 2019]
 - D Basu Gold Medal Award Committee [2019]
 - ISI Data repository Committee. [2018-2020]
- **Member** of the following committees in Indian Statistical Institute:
 - Selection Committee for Research Associates (RAs) in ASD [2021 – present]
 - ISI Admission Committee for B. Stat. [2022, 2021]
 - ISI Admission Committee for M. Tech. in Computer Science [2022, 2019]
 - ISI Admission Committee for PGDARSMA [2023, 2022]
 - M. Stat. Project supervision Committee [2022, 2021]
- **Joint Coordinator** for the organization of *SERB PAC-EECE Review Meeting* on behalf of Indian Statistical Institute [July, 2023].
- **Seminar Coordinator** for Interdisciplinary Statistical Research Unit, Indian Statistical Institute, Kolkata, India. [2022; 2018 – 2020]
- **Workshop/Conference Organization:**
 - **Joint Coordinator**, *Workshop on Computational Statistics and Data Analytics*, Interdisciplinary Statistical Research Unit, Indian Statistical Institute, Kolkata, India. [March 7-12, 2022]
 - **Organizing Committee Member**, *Indo-French Joint Workshop on Statistics and Artificial Intelligence for Data Science*, Centre for Artificial Intelligence and Machine Learning (CAIML), Indian Statistical Institute, Kolkata, India [January 13-17, 2020]
 - **Joint Coordinator**, *Workshop on Data Analytics 2019*, Interdisciplinary Statistical Research Unit, Indian Statistical Institute, Kolkata, India. [March, 2019]
 - **Volunteer**, *International Conference in Robust Statistics (ICORS) 2015*, Indian Statistical Institute, Kolkata, India. [January, 2015]

Short-Term Academic Visits (Invited ones only):

- **University of Trento, Department of Mathematics, Italy.**
Collaborative research discussion with Prof. Claudio Agostinelli.
(November-December, 2022)
- **University of Oslo, Department of Biostatistics, Norway.**
Collaborative research discussion with Prof. Magne Thoresen.
(May-June, 2023, January 2020, January 2018)
- **Complutense University of Madrid, Spain.**
Invited talk & research collaboration with Prof. Leandro Pardo & Prof. Nirian Martin.
(March 2019, July 2017, June 2016)
- **FocuStat Group, Department of Mathematics, University of Oslo, Norway.**
Invited Guest talk & research discussion with Prof. Nils Hjort.
(June 2016)
- **ETH Zurich, Seminar für Statistik, Switzerland.**
Invited talk & research discussion with Prof. Marloes Maathuis.
(September 2015)

Conference Presentations/ Seminars/Invited Talks:

1. April, 2023: *Robust estimation of the tail index using density power divergence.* **Invited Guest, South African Statistical Association (SASA) – Extreme Value Theory (EVT) Seminar (Online).**
2. December, 2022: *Robust Sure Independence Screening for Non-polynomial dimensional Generalized Linear Models.* **Invited Speaker, IMS International Conference on Statistics and Data Science (ICSIDS), Florence, Italy.**
3. December, 2022: *Robust statistical modeling of monthly rainfall: The minimum density power divergence approach.* **Invited Speaker, 2022 International Indian Statistical Association (IISA) International Conference, Bengaluru, India.**
4. December, 2022: *Robust adaptive variable selection in ultra-high dimensional linear regression models.* **Invited Speaker, 15th International Conference of CMStatistics 2022, London, UK (Online).**
5. October, 2022: *Robust inference under the parametric proportional hazard models in Survival Analyses.* **VI International Scientific and Practical Conference**, organized jointly by ISI Kolkata, India, and Namangan Institute of Engineering and Technology, Uzbekistan (Online).
6. March, 2022: *Robust adaptive Lasso in high-dimensional logistic regression with applications to genomic classification of cancer patients.* **NU-ISI Biomedical Data Science Online Workshop**, organized jointly by ISI Kolkata, India, and Nagasaki University, Japan (Online).
7. September, 2021: *Robust adaptive variable selection in ultra-high dimensional linear regression models.* **International Conference of Robust Statistics (ICORS) 2021, TU Wien, Vienna, Austria (Online).**
8. December, 2019: *Robust Wald-Type Tests under Random Censoring with Applications to Clinical Trial Analyses.* **Invited Speaker, 5th International Conference on Statistics for Twenty First Century (ICSTC 2019), University of Kerala, Trivandrum, India.**
9. August, 2019: *Robust and Efficient Estimation in the Parametric Cox Regression Model under Random Censoring.* **62nd ISI World Statistics Congress, Kuala Lumpur, Malaysia.**

10. June, 2019: *Robust Pseudo Bayes Estimation under Independent Non-Homogenous Set Up*. **Fourth Russian-Indian Joint Conference in Statistics and Probability**, Euler Mathematical Institute, Saint-Petersburg, **Russia**.
11. March, 2019: *Ultrahigh-dimensional Robust & Efficient Sparse Regression using Non-Concave Penalized Density Power Divergence and Future Directions*. **Invited Talk**, Complutense University of Madrid, **Spain**.
12. January, 2019: *Robust Pseudo Bayes Estimation under Independent Non-Homogenous Set Up*. **ISI-ISM-ISSAS Joint Conference 2019**, Academia Sinica, Taipei, **Taiwan**.
13. July, 2018 (Poster): *Robust Wald-Type Tests under Random Censoring*. **International Biometric Conference (IBC) 2018**, Barcelona International Convention Centre, Barcelona, **Spain**.
14. July, 2018: *Robust and Efficient Estimation in the Parametric Cox Regression Model under Random Censoring*. **International Conference of Robust Statistics (ICORS) 2018**, KU Leuven, Leuven, **Belgium**.
15. June, 2018: *A General Robust Bayes Pseudo-Posterior: Exponential Convergence result with Applications*. **Conference on Stochastic Processes and their Applications (SPA) 2018**, University of Gothenburg, Gothenburg, **Sweden**
16. December, 2017: *A General Robust Bayes Pseudo-Posterior: Exponential Convergence results with Applications*. **Invited Speaker, 2017 International Indian Statistical Association (IISA) International Conference on Statistics**, Hyderabad, **India**.
17. December, 2017: *Robust and Efficient Estimation with Parametric Cox Regression under Random Censoring*. **Young Statistician Seminar for Bose-Nandi Award**, Calcutta Statistical Association, University of Calcutta, Kolkata, **India** (Received the first place of the Bose-Nandi Award).
18. December, 2017: *Divergence based robust estimation of the tail index through an exponential regression Model*. **Mathai Award Lecture**, 83rd Annual Conference of Indian Mathematical Society (IMS) - an International Meet, Sri Venkateswara University, Tirupati, **India** (Received the Award).
19. October, 2017: *Minimum Distance Inference in High-dimensional Data: Past, Present and Future*. **Invited Talk**, Indraprastha Institute of Information Technology, Delhi, **India**.
20. July, 2017: *Robust inference under the Beta regression model with application to health care studies*. **International Society of Clinical Biostatistics (ISCB) Conference 2017**, Vigo, **Spain**.
21. July, 2017: *Minimum Distance Inference in High-dimensional Data: Past, Present and Future*. **Invited Talk**, Complutense University of Madrid, **Spain**.
22. August, 2016: *Non-Concave Penalized Log-Likelihood in Linear Mixed-Effect Models and Regularized Selection of Fixed Effects*. **International Society of Clinical Biostatistics (ISCB) Conference 2016**, University of Birmingham, **United Kingdom**.
23. August, 2016 (Poster): *Non-Concave Penalized Log-Likelihood in Linear Mixed-Effect Models and Regularized Selection of Fixed Effects*. **CRiSM Master Class on Sparse Regression**, University of Warwick, **United Kingdom**.
24. August, 2016: *General Model Adequacy Tests & Robust Statistical Inference based on A New Family of Divergences*. **Invited Talk**, Indian Statistical Institute, **India**.
25. July, 2016: *Robust Wald-Type Tests under Random Censoring*. **International Conference of Robust Statistics (ICORS) 2016**, Geneva School of Economics and Management (GSEM), University of Geneva, **Switzerland**.
26. June, 2016: *Robust Inference in Generalized Linear Models: The Density Power Divergence Approach*. **Invited Talk**, Complutense University of Madrid, **Spain**.

27. February, 2016: *Robust Minimum Divergence Inference for Independent but Non-Homogeneous Data*. **Invited Talk**, University of Oslo, **Norway**.
28. January, 2016: *General Model Adequacy Tests and Robust Statistical Inference based on A New Family of Divergences*. **Young Scientist Award Session, 103rd Indian Science Congress**, University of Mysore, **India** (Received the Award in the section of 'Mathematics including Statistics').
29. November, 2015: *Robust Minimum Divergence Inference using Density Power Divergence and its Extensions: Applications to Non-i.i.d. data and Bayesian Paradigm*. XXXV Annual Convention of **Indian Society for Probability and Statistics (ISPS)**, Lucknow University, **India** (Received the Prof A. R. Kamat Award for Best Ph.D. Thesis in Statistics 2015).
30. September, 2015: *Robust Minimum Divergence Inference for Independent but Non-Homogeneous Data*. **Invited Talk**, Seminar fur Statistik, **ETH Zurich, Switzerland**.
31. January, 2015: *Robust Bounded Influence Tests for Independent but Non-Homogeneous Observations with Application to Linear Regression*. **Invited Speaker, International Conference of Robust Statistics (ICORS) 2015**, Indian Statistical Institute, **India**.
32. November, 2014: *Click, Click, Click, Classified: Real-time classification of independent sample into existing segments in just 2 minutes*. 24th Annual Seminar of the **Market Research Society of India (MRSI)**, Delhi-NCR, **India** (Received the Best paper of the Session award).
33. August, 2013: *On Robust Minimum Divergence Estimation based on the S-Divergence*. Young Statistician's Satellite Meeting, Hong Kong University, Satellite event of the **59th ISI World Statistics Congress, Hong Kong** (Selected for the first place of the Jan Tinbergen Award).
34. July, 2012: *Estimating Copula and some New Tests of Independence based on a generalized framework of all rank- based Statistics in Bivariate Sample*. **The P.C.M. Memorial Award Presentations**, Indian Statistical Institute, **India**.
35. June, 2011: *A New Kolmogorov-Smirnov Type Test for goodness-of-fit using a smooth estimator of the distribution functions*. **The D. Basu Memorial Award Presentations**, Indian Statistical Institute, **India** (Received the Award).

Academic Networking:

- **Members of the following Scientific Organizations:**
 - International Statistical Institute (ISI) [Regular, 2016 – Present]
 - Institute of Mathematical Statistics (IMS) [Regular, 2018 – Present]
 - International Society of Clinical Biostatistics (ISCB) [2016 – Present]
 - Bernoulli Society [Student 2014, Regular 2018 – Lifetime]
 - International Biometric Society – Indian Region (Lifetime)
 - International Indian Statistical Association (Lifetime)
 - Indian Science Congress Association (Lifetime)
 - Indian Mathematical Society (Lifetime)
 - Indian Society for Probability and Statistics (Lifetime)
 - Indian Statistical Institute Alumni Association (Lifetime)
 - Econometric Society (2019 – 2021)
 - The Pacific Basin Consortium for Environment and Health (2017)
- **Major Research Collaborators** (with at least 4 collaborative publications) other than students:
 - Prof. Ayanendranath Basu (PhD Supervisor), Indian Statistical Institute, Kolkata, **India**.
 - Prof. Magne Thoresen (Post-Doctoral Supervisor), University of Oslo, **Norway**

- Prof. Banasri Basu, Indian Statistical Institute, Kolkata, **India**.
 - Prof. Leandro Pardo, Complutense University of Madrid, **Spain**
 - Prof. Nirian Martin, Complutense University of Madrid, **Spain**
 - Dr. Abhijit Mandal, University of Minnesota, **USA**
 - Dr. Avijit Maji, Reserve Bank of India, **India**
- Apart from my collaborators, following eminent scientists have **cited my works** (according to Google scholar):
 - Prof. E Ronchetti, Prof. V Yohai, Prof. W Stummer, Prof. M Broniatowski , Prof. A Toma, Prof. A Marrazi, Prof. M Avella Medina, Prof. E Hamada, Prof. L Ventura, Prof. H Shimodaira, Prof. Holmes, Prof. AN Vidyashankar, Prof. H Fujisawa, Prof. SY Tay, Prof. M Sugiyama, Prof. M González, and many others.

Extra-Curricular Activities:

- Hobbies: Drawing, Reading Fiction/Thrillers.
- Completed 5th Year of Fine Arts Course from Sarva Bharatiya Charu Kala Mandir.
- Received Honorable Mention for a successful creative work (painting) entered for the International Children's Art Exhibition LIDICE 2003, Czech Republic.

References:

- Ayanendranath Basu, Professor, Indian Statistical Institute, Kolkata, India. ayanbasu@isical.ac.in
- Leandro Pardo, Professor, Complutense University of Madrid, Spain. lpardo@mat.ucm.es
- Magne Thoresen, Professor, University of Oslo, Norway. magne.thoresen@medisin.uio.no
- Michel Broniatowski, Professor, Pierre and Marie Curie University - Paris 6, Paris, France. Michel.broniatowski@upmc.fr
- Claudio Agostinelli, Professor, Università di Trento, Italy. claudio.agostinelli@unitn.it

I do hereby testify that the above information is correct to the best of my knowledge.

Date: 04.04.2024

ABHIK GHOSH
Kolkata, India.