

## DR. SARAN ISHIKA MAITI

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### PRESENT POSITIONS & AFFILIATION

Associate Professor  
Department of Statistics  
Institute of Science  
Visva-Bharati University  
Santiniketan, India



### RESEARCH INTERESTS

- Nonparametric Regression
- Stochastic Processes & Time Series
- Distribution Theory
- Analysis of Covariance and Correlation Matrix

### EDUCATIONAL QUALIFICATIONS

<b>Ph.D. (Statistics)</b>  <u>Dissertation Title</u> Some Contributions to the Statistical Problems related to Linearly Structured Covariance and Correlation Matrices	<b>2014</b>	University of Kalyani, West Bengal, India
<b>M.Sc. (Statistics)</b>  <u>Special Papers</u> Advanced Multivariate Analysis, Applied Multivariate Analysis, Time Series Analysis	<b>2004</b>	University of Kalyani, West Bengal, India
<b>B. SC. (Statistics as Major)</b> Physics and Mathematics (Subsidiary)	<b>2002</b>	University of Kalyani, West Bengal, India

### POST DOCTORAL EXPERIENCE

- Aailed University fellowship granted by **Indiana-University Purdue University Indianapolis (IUPUI), USA** as a **visiting research scientist** in period 2014-2015.

Theme of research: **Random Walk model on three dimensional solids**

## ACADEMIC HONORS AND AWARDS

- UGC-CSIR NET (LS) (2004)
- SLET(WBCSC) (2004)
- University Topper Student Award in Bachelor of Science (2002)
- Ranked **20<sup>th</sup>** in the merit list of West Bengal Board of Secondary Education Examination out of 6,00,000 students (**1997**).

## OTHER ACADEMIC EXCELLENCE

- **SWAYAM-NPTEL MOOCS Course Instructor under Ministry of Education, GOI**
  - Course: Basics of Nonparametric Tests with Applications by R
  - Discipline: Mathematics
  - Session: **Jul-Dec, 2025**
  - Platformed by: IIT Madras
  - Level: Undergraduate/Post graduate level ( NCrF: 4.5-8)
- **MAJOR RESEARCH PROJECT**

Principal Investigator, Extramural Research project (EMR/2017/005421) entitled "Aspects of tests of independence on nonparametric regression theory-a data driven approach" funded by **Science, Education, Research Board, Department of Science and Technology (DST-SERB), Govt. of India,**  
Duration: 2018-2021, Budget:14,91,158 INR.

## ACADEMIC EXPERIENCE ABROAD (USA)

<ul style="list-style-type: none"><li>• <b>Visiting Assistant Professor</b></li><li>• <b>Expert member in Graduate Studies (Masters' Program) Committee</b></li><li>• <b>Invited member in Ph.D. qualifying exam committee</b></li></ul>	<b>July, 2015 – June, 2016</b>	Department of Mathematical Sciences Purdue School of Science Indiana University-Purdue University(IUPUI), Indiana, USA
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## STUDENTS' SUPERVISION

- **PhD supervision:** a) **1** research student awarded (Title of thesis: Some aspects on measures of association in testing independence between covariate and error under Nonparametric and Semiparametric Regression)  
b) **1** research student (completed Pre-PhD) (Title : A study of some aspects on nonparametric classification techniques using kernel method)
- **Masters' Thesis supervision: 26** (2010 onwards)

## LIST OF PUBLICATIONS

### Journal Articles (Published)

#### In Subject Publication

- Das, S. and **Maiti**, S. I. (2025). A class of consistent tests of independence between covariate and error in nonparametric regression with missing at random response. *International Journal of Applied Mathematics and Statistics*, vol 64(2), 18-46.
- Barma, B. and **Maiti**, S. I. (2024). A data-centric study on relation between  $n$  and  $p$  in PCA based parametric and nonparametric classification, *Journal of Econometrics and Statistics*, vol 5, no.1, pp.37-56.
- Chakraborty, A., Rana, S. and **Maiti**, S.I. (2024). Transmuted shifted Lindley distribution: characterizations, classical and Bayesian estimation with applications. *Annals of Data Science*
- Das, S. and **Maiti**, S. I. (2024). A rank based test of independence of covariate and error in nonparametric regression with missing completely at random response situation". *Statistics and Applications*, vol. 22, no. 1, pp. 195-219.
- Das, S., Halder, S. & **Maiti**, S. I. (2022). An Extended Approach to Test of Independence between Error and Covariates under Nonparametric Regression Model. *Thailand Statistician*.
- **Maiti**, S.I., Rana, S. & Chakraborty, A (2022), Estimation in shifted Lindley Distribution, *Statistics and Applications*, Vol 20, Issue 1
- **Maiti**, S.I. (2021), Equi-covariance composite-a connection to equal row sum covariance matrix, *Thailand Statistician*, Vol 19, Issue 4
- Das, S. & **Maiti**, S. I. (2021), Uniform spacings-a bird's eye view, *Statistics and Applications*, Vol 19, Issue 2
- **Maiti**, S. I. & Sarkar, J. (2019), Symmetric Random Walks on Paths and Cycles, *Mathematics Magazine*, American Mathematical Association, Vol. 92, Issue 4, pp.252-268.
- Sarkar, J. & **Maiti**, S.I. (2017), Symmetric Random Walks on Regular Tetrahedra, Octahedra, and Hexahedra, *Calcutta Statistical Association Bulletin*, Vol.69, Issue 1, pp.110-128.
- **Maiti**, S.I. (2017), Large Sample test criteria on Toeplitz covariance structure; *Communications in Statistics-Simulation and Computation*, Vol 45, Issue 1, pp.1-15.
- **Maiti**, S.I. (2017), Tau proportionate form of congeneric covariance structure, *International Journal of Probability and Statistics*, Vol.5, Issue 5, pp.1-12.
- **Maiti**, S.I. & Maiti, S.S.(2013), Maximum likelihood estimation of the linearly structured correlation matrix by a Jacobi-type iterative scheme(2013), *Journal of Statistical Computation and Simulation*, Vol 83, Issue 5, pp.896-921.
- **Maiti**, S.I. (2010), Construction, properties and statistical applications of positive definite intraclass matrix, *Linear and Multilinear Algebra*, Vol 59(8), pp.891-904.
- **Maiti**, S.I. (2010), On the possibility of extraneous maximum likelihood estimate of the parameter involved in AR(1) , *Pakistan Journal of Statistics*, Vol 26, Issue 4, pp.629-635.

- **Maiti, S.I.** (2009) Reduction of bias and mean square error in estimating AR(1) model parameter based on Quenouille-type and optimum overlapping series splitting estimators (2009), *Journal of Statistical Research*, Vol.43, Issue 1, pp.21-39.

### **Collaborative Research Papers**

- **Maiti, S.I. & Saikia S.** (2021), An approach for quantifying western blots: the case of signal intensity and the statistical analysis, *Acta Fytotechnica et Zootechnica*, Volume 24(2), pp. 177-198.
- Halder, P. Debnath M., **Maiti, S.I.** & Ray, S. (2020), Influence of water quality on seasonal variation of lentic microalgae community in Bankura district West Bengal, *Indian Hydrobiology*, Volume 19 (1& 2), pp.177-198.
- **Maiti, S. I. & Saikia, S.**(2019), Effect size-a magic wand for fickle P-value in experimental biological research. *Journal of Advanced Scientific Research*, Vol. 10(4), pp.01-07.
- Maiti, S. I. & Saikia, S.(2019),  $p < .05$  is not enough. *Advances in Zoology and Botany*, Vol 7, pp.19-27.
- Debnath, S., **Maiti, S.I.** & Saikia, S. (2020), pH and Temperature Dependent Gut Enzyme Niche in a Stomachless Herbivorous Freshwater Fish *Amblypharyngodon mola* (Hamilton, 1822), *Journal of Scientific Research and Advances*, Vol.12(4), 729-741.
- Roy, S., **Maiti, S.I.** , Saikia, S, & Ray S.(2020). Ecomorphological Traits Determine Assemblage Pattern of Small Freshwater Fish in Smaller Lentic Aquatic Bodies, *Journal of Scientific Research and Advances*, Vol.12(4), 713-727.

### **Book**

- Saikia, S.K. & **Maiti, S. I.** (2021). *Fundamentals of Research Methodology*. Akinik Publishers ISBN: 978-93-91216-25-2.  
Book DOI: <https://doi.org/10.22271/ed.book.1332>

### **Papers Published in Conference proceeding**

- Maiti, S.I.& Mondal, A.I. (2013), X-11 Seasonal Forecasting Using Base SAS, 3rd IIMA International Conference on Advanced Data Analysis, Business Analytics and Intelligence Conference Proceeding, April 13 - 14, 2013, IIM Ahmedabad, India.
- Maiti, S.I. (2012), On Estimating 1st Order Autoregressive Process Parameter by Proportional Series Splitting OLS Estimators , Conference Proceeding in HICAMS International Conference 2012, pp. 623 – 630.

### **Workshop, Presentations, Conference Papers**

- **Resource Person**
- Worked as a resource person in the National Workshop on “ Advanced application of R in planning, research and development” held during 2/12/2019-11/12/2019 organized by A. K. Dasgupta Center for the planning and Development, Visva-Bharati, Santiniketan.
- Served as a Resource Person in three day workshop on “Introduction to Data Analysis” in Pairee InfoTech Pvt. Ltd, Bangalore from 3 rd Jan-5 th Jan’2019.
- **Chairing/invited/contributed lectures in national/international conference**
- Chaired a session in an invited session entitled “Recent Advancement of

predictive analysis” Annual Conference of International Indian Statistical Association, (2024), at Cochin University of Science and Technology, Kerala.

- Delivered an invited lecture on “A rank based test on the independence between nonparametric covariate and the error under semiparametric regression with missing at random” in the International Conference organized by International Indian Statistical Association, 2024, held at Cochin University of Science and Technology, Kerala.
- Delivered Invited lecture on “A modified approach for testing independence of error and covariates in nonparametric regression” in 2<sup>nd</sup> International Conference on Applied Statistics, 2019 , ISRT, University of Dhaka, Bangladesh
- Delivered a seminar lecture as speaker on “Staircase equal-row-sum-structure of covariance matrix – an observational model based study” in Department of Public Health, University of Louisville, Kentucky, USA. (2016)
- Delivered a seminar lecture as University Colloquium speaker on “Tau proportionate form of Congeneric test in Test Reliability Theory” in Department of Mathematical Sciences, Indiana University-Purdue University at Indianapolis (IUPUI), USA(2016).
- Delivered a lecture as an invited speaker on “Some introspections of Equal-row-sum covariance structure” in 2015 International Indian Statistical Association Conference held in Pune, India(2015)
- Delivered a lecture as an contributed speaker on “A Symmetric Simple Random walk on a Finite Linear Chain or on a Finite Closed Loop” in Ninth International Triennial Calcutta Symposium hosted jointly by Calcutta Statistical Association and Department of Statistics, University of Calcutta (2015)
- Delivered a seminar lecture entitled “A Symmetric Simple Random walk on a Finite Linear Chain or on a Finite Closed Loop” as seminar lecture Speaker in Department of Mathematical Sciences, Indiana University-Purdue University Indianapolis, USA(2015).
- Delivered “Inferential Methods on the testing of Toeplitz Covariance Structure” as a contributed speaker in National Seminar on Research Scholar Meet, organized by Department of Statistics, University of Calcutta, India(2013).
- Invited Speaker in Summer School on Basic Statistics and Probabilities, Indian Institute of Technology, Guwahati (2013).
- Delivered a lecture as contributed speaker in An introspection to Equi-Covariance Composite Class, Eighth International Triennial Calcutta Symposium on probability and Statistics, India (2012).
- On Estimating AR(1) parameter by proportional series splitting estimator in Heber International Conference on Applications of Mathematics and Statistics, Bishop Heber College, University of Trichy, India (2012).
- Large Sample Testing of Toeplitz Covariance Structure, Statistics In Concepts and Methods for Modern World” organized by Institute of Applied Statistics, Sri Lanka jointly with School of Mathematics and Statistics, University of Sydney, Australia (2012)
- Participated in Winter School on “Teaching of Statistics at undergraduate level” organised by Applied Statistics unit of Indian Statistical Institute, Kolkata (2007).

## Academic Visits

Visited Department of Psychology, University of Louisville, Kentucky, U.S.A. on March’2016.

## Other Academic Activities

- **Convener** in the Workshop named “National Workshop on Statistical Data Analysis in Multidisciplinary research—learning through software”, held in Department of Statistics, VB.
- **Reviewer** in Journal of Applied Statistics, Communications in Statistics-Simulation and Computation, Calcutta Statistical Association Bulletin, Psychological Methods, Annals of Data Science

**TEACHING EXPERIENCE: 18 years**

**( INDIA)**

<b>Designation &amp; Affiliation</b>	<b>Course Taught</b>	<b>Period</b>
<u>Associate Professor</u> Department of Statistics, Visva-Bharati University, Santiniketan, India	<b>Same As below</b>	<b>Nov’2019- till date</b>
<u>Assistant Professor</u> Department of Statistics, Visva-Bharati University, Santiniketan, India	<div> <b>Post Graduate</b> <ul style="list-style-type: none"> <li>✓ Statistical Inference (Estimation &amp; Testing of Hypotheses)</li> <li>✓ Stochastic Processes</li> <li>✓ Time Series Analysis</li> <li>✓ Econometrics</li> </ul> </div> <div> <b>Undergraduate</b> <ul style="list-style-type: none"> <li>✓ Mathematical Probability</li> <li>✓ Nonparametric Inference</li> <li>✓ Linear Algebra</li> <li>✓ Multivariate Statistics</li> <li>✓ Sampling distribution</li> </ul> </div>	<b>June’2009-- Nov’2019</b>
<u>Lecturer &amp; Head</u> Department of Statistics Bethune College, Kolkata Under West Bengal Higher Education Service	<ul style="list-style-type: none"> <li>✓ Mathematical Probability</li> <li>✓ Statistical Tools for Biology</li> <li>✓ Descriptive Statistics</li> </ul>	<b>July’2006- June’2009</b>

**TEACHING EXPERIENCE: 2 years**

**(UNITED STATES OF AMERICA)**

<u>Visiting Research Scientist</u> Department of Mathematical Sciences Purdue School of Sciences Indiana University Purdue University, Indiana, USA	STAT350: Introduction for Statistics STAT301: Elementary methods of Statistics	Fall Semester 2014 & Spring Semester 2015 (August 2014-May 2015)
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Visiting Assistant Professor Department of Mathematical Sciences Purdue School of Sciences Indiana University Purdue University, Indiana, USA	STAT512: Theory of Regression STAT531: Categorical Data Analysis	Fall Semester 2015 & Spring Semester 2016 (August 2015-May 2016)
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## OTHER ADMINISTRATIVE DUTIES

- **University Committee**

1. Member of University Internal Quality Assurance Cell (IQAC) of Visva-Bharati (2021-till date),
2. NAAC preparation & steering committee, Visva Bharati (2021-till date)
3. Visva-Bharati Mission, 2047 Committee under Vikshit Bharat Mission, Govt. of India (2025 till date)
4. Member in International collaboration & International Visitors Committee, Visva-Bharati (2025 till date)
5. Expert member in Central university Statistics cell, Visva Bharati (2022-till date)
6. Member in University Central Library e-books/e-contents purchase committee (2023-till date)

- **Department Committee**

1. Departmental Quality Assurance Committee
2. Department Routine and examination roster committee

## PREVIOUS ADMINISTRATIVE DUTIES

1. Worked as a member of NAAC'2021 Preparatory Committee for Visva-Bharati (2020-2021)
2. Worked as councillor, Central Admission Committee, Visva-Bharati (2018-2022)
3. Worked as a member in University NAAC'2021 self-study report generation committee, Visva-Bharati (2020-2021)
4. Worked as member of Visva-Bharati university young scholar lecture series committee

## REFERENCES

Will be provided on request

## PERSONAL PEEK

After the details of my professional profile if you want a sneak peek into my personal interests, here are some glimpses on the non-linear myself.

- I have penchant on Indian classical (Hindustani) music.
- I am fond of new culture, heritage, and philosophy among others.
- I am a voracious reader. I try to grab all the books on English and Bengali literature as many as I can.

- I love Nature and believe that it is the best sauce which pours us with eternal peace. So hiking amidst the shadowy jungle path or trailing along a steep, mossy, pebbled hill way are always my favourite.