

# Soudeep Deb

CURRENT POSITION	<b>Associate Professor and Chairperson</b> Decision Sciences Area Indian Institute of Management Bangalore, India.	
RESEARCH INTERESTS	Time series, Spatio-temporal modeling, Nonparametric methods, Clustering and classification, Sports analytics, Applications of statistics in real estate, finance, climate science, and other fields.	
EXPERIENCE	<b>Indian Institute of Management Bangalore</b> , Bengaluru, KA, India. <ul style="list-style-type: none"><li>• Chairperson, Decision Sciences Area.</li><li>• Associate Professor, Decision Sciences Area.</li><li>• Assistant Professor, Decision Sciences Area.</li></ul> <b>NBC Universal Media, LLC.</b> , New York, NY, USA. <ul style="list-style-type: none"><li>• Senior Lead Data Scientist, Decision Sciences Division.</li></ul>	Mar 2020 - Present Apr 2024 - Present Jul 2024 - Present Mar 2020 - Jul 2024 Sep 2018 - Feb 2020
EDUCATION	<b>University of Chicago</b> , Chicago, IL, USA.  <b>Ph.D., Statistics</b> <ul style="list-style-type: none"><li>• Thesis: Irregular spaced random field, Spatio-temporal data and Clustering of time series</li><li>• Advisory committee: Dr. Wei Biao Wu, Dr. Ruey S. Tsay, Dr. Michael L. Stein</li></ul> <b>Indian Statistical Institute</b> , Kolkata, WB, India.  <b>Master of Statistics (M. Stat.)</b> <ul style="list-style-type: none"><li>• First Division with Distinction, Specialization: Mathematical Statistics and Probability</li><li>• Thesis: Association analysis for identifying rare genetic variants, Advisor: Dr. Saurabh Ghosh</li></ul> <b>Bachelor of Statistics (B. Stat.)</b> <ul style="list-style-type: none"><li>• First Division with Distinction</li></ul>	Aug 2018 May 2013 May 2011
BOOKS	<ul style="list-style-type: none"><li>• (With S. Das) Business Analytics: Data to Decisions. First edition in 2025, published by Universities Press (India) Private Limited. ISBN: 9789393330994. <a href="#">[Amazon link]</a></li><li>• (With D. Dey) Mathematical Techniques for Competitive Examinations. First edition in 2023, published by Orient Blackswan Pvt Ltd. ISBN: 9393330107. <a href="#">[Amazon link]</a></li></ul>	
STUDENTS	<b>PhD thesis advisor/co-advisor:</b> <ul style="list-style-type: none"><li>• Anchal Soni, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Methods of analyzing structural breaks in multivariate time series: Applications to financial data. Feb 2023</li><li>• Siddharth Rawat, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Spatio-temporal models in epidemiology and climate change. May 2023</li><li>• Kapil Gupta, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Analyzing house price dynamics using novel spatio-temporal methods. Mar 2025</li><li>• Archi Roy, Dept of Mathematics, Indian Institute of Science Education &amp; Research Pune. Thesis: Nonparametric methods for short and long-range dependent time series: Applications in financial and biomedical datasets. Aug 2025</li><li>• Kunal Rai, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Nonparametric methods and PINN in quantile regression for time series data. (Exp) 2026</li><li>• Chinmay Divekar, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Novel methods for within-game analytics in sports. (Exp) 2026</li><li>• Amrutha Seshagiri, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Essays on tourism analytics. (Exp) 2028</li></ul>	

**STUDENTS****Doctoral committee member:**

- M Mareeswaran, Finance & Accounting, Indian Institute of Management Bangalore. Mar 2025
- Sajad S Santhosh, Public Policy, Indian Institute of Management Bangalore. Jul 2025
- Sabhya Rai, Economics, Indian Institute of Management Bangalore. (Exp) 2026
- Kalaga Venkata Laxmana Tejaswi, Marketing, Indian Institute of Management Bangalore. (Exp) 2028

**MS thesis advisor:**

- Snehil Maurya, Indian Institute of Science Education & Research Mohali. (Exp) 2026

**RESEARCH GRANTS****India-Israel Joint Research Cooperation (IIJRC) Grant**, 10th CFP-2023.

- From Department of Science & Technology, India, and Ministry of Innovation, Science & Technology, Israel.
- Co-PI: Prof. Itai Dattner, University of Haifa, Israel.
- Project: Hybrid-AI Quantile Regression Combining Nonparametric Statistical Methods and Physics-Informed Neural Networks for Analysing Spatio-temporal Climate Data.
- Amount: INR 1.6 million for two years (2024 – 2026).

**Research Challenge Grant** from IIM Bangalore, India.

- Co-PI: Prof. Anand Deo, IIM Bangalore, India.
- Project: Estimating spatial extremes using EVT-based scaling.
- Amount: INR 1.5 million for 18 months (March 2025 to September 2026).

**Research Travel Grant** from London Mathematical Society, United Kingdom (UK).

- Offered under Scheme 5 ‘Collaborations with Developing Countries’ Grant.
- Co-PI: Prof. Rishideep Roy, University of Essex, UK.
- Amount: GBP 2200 for collaborative research visit to the UK (December 2024).

**Research Seed Grant** from IIM Bangalore, India.

- Project: Nonparametric methods of structural break detection in time series.
- Amount: INR 0.5 million for 18 months (July 2024 to December 2025).

**Research Seed Grant** from IIM Bangalore, India.

- Project: New techniques to analyze categorical and discrete time series data.
- Amount: INR 0.3 million for two years (August 2021 to December 2023).

**Young Faculty Research Chair Grant** from IIM Bangalore, India:

- Amount: INR 0.9 million for three years (March 2020 to February 2023)

**JOURNAL & CONFERENCE PUBLICATIONS**

- Basu Sarbadhikary, S., Roy, A., **Deb, S.** (2026) A data-driven approach to spatial zoning and anomaly detection in the dynamic real estate network. Environment and Planning B: Urban Analytics and City Science, 23998083251411954. [\[publication\]](#)
- Sen, S., **Deb, S.** (2025) tSNE-Spec: A new classification method for multivariate time series data. Journal of Multivariate Analysis, 105537. [\[publication\]](#)
- Gupta, K., **Deb, S.** (2025) A divide-and-conquer approach for spatio-temporal analysis of large house price data from Greater London. Annals of Operations Research, 1-42. [\[publication\]](#)
- **Deb, S.**, Das, S. (2025). Optimal selection of starting lineup for a football team. To appear in IIMB Management Review. [\[preprint\]](#)
- Deshmukh, S. S., **Deb, S.** (2025) A survey of statistical and machine learning methods of quantile regression in time series and their suitability in predicting dengue outbreaks. Japanese Journal of Statistics and Data Science, 1-49. [\[publication\]](#)
- **Deb, S.**, Jana, K. (2024) Nonparametric quantile regression for time series with replicated observations and its application to climate data. Statistical Science, 39(3), 428-448. [\[publication\]](#)
- **Deb, S.**, Roy, R., Das, S. (2024). Forecasting elections from partial information using a Bayesian model for a multinomial sequence of data. Journal of Forecasting, 43(6), 1814-1834. [\[publication\]](#).
- Divekar, C., **Deb, S.**, Roy, R. (2024) Real-time forecasting within soccer matches through a Bayesian lens. Journal of the Royal Statistical Society Series A: Statistics in Society, 187(2), 513–540. [\[publication\]](#)

- Chattopadhyay, A., **Deb, S.** (2024) A spatio-temporal model for binary data and its application in analyzing the levels of COVID-19 spread. *AStA Advances in Statistical Analysis*, 108(4), 823-851. [\[publication\]](#)
- Lakshmi M.V., **Deb, S.**, Sen, R. (2024) Environmentally Responsible Index Tracking: Maintaining Performance while Reducing Carbon Footprint of the Portfolio. *Statistics and Applications* (forthcoming).
- Gupta, K., Krishnamurthy, V., **Deb, S.** (2024) What elements of the opening set influence the outcome of a tennis match? An in-depth analysis of Wimbledon data. *IIMB Management Review*. [\[publication\]](#)
- Roy, A., **Deb, S.**, Chakarwarti, D. (2024) Impact of COVID-19 on public social life and mental health: A statistical study of Google Trends data from the USA. *J. Appl. Stat.*, 51(3), 581-605. [\[publication\]](#)
- Roy, A., Soni, A., **Deb, S.** (2023) A wavelet-based methodology to compare the impact of pandemic versus Russia-Ukraine conflict on crude oil sector and its interconnectedness with other energy and non-energy markets. *Energy Economics*, 124, 106830. [\[publication\]](#)
- **Deb, S.**, Karmakar, S. (2023) A novel spatio-temporal clustering algorithm with applications on COVID-19 data from the United States. *Computational Statistics & Data Analysis*, 107810. [\[publication\]](#)
- **Deb, S.** (2023). Analyzing airlines stock price volatility during COVID-19 pandemic through internet search data. *International Journal of Finance & Economics*, 28(2), 1497-1513. [\[publication\]](#)
- Mareeswaran, M., Sen, S., **Deb, S.** (2023). New methods of structural break detection and an ensemble approach to analyze exchange rate volatility of Indian rupee during COVID-19. *Journal of the Royal Statistical Society Series A: Statistics in Society*, 187(1), 39-61. [\[publication\]](#)
- Rawat, S., **Deb, S.** (2023). A spatio-temporal statistical model to analyze COVID-19 spread in the USA. *Journal of Applied Statistics*, 50(11-12), 2310-2329. [\[publication\]](#)
- **Deb, S.**, Majumdar, M. (2023). A quadratic trend-based time series method to analyze the early incidence pattern of COVID-19. *Biostatistics & Epidemiology*, 7(1), e2076529. [\[publication\]](#)
- Majumdar, M., Banerjee, M., Sengupta, J., **Deb, S.**, Jana, C. K., Roy, B. K. (2023) Prevalence and spectrum of diabetic peripheral neuropathy and its correlation with insulin resistance – An experience from eastern India. *International Journal of Advanced Research*, 11(06), 1085-1094. [\[publication\]](#)
- **Deb, S.**, Deb, S. (2022). An ensemble method for early prediction of dengue outbreak. *Journal of the Royal Statistical Society Series A*, 185(1), 84-101. [\[publication\]](#)
- **Deb, S.** (2022). A goal based index to analyze the competitive balance of a football league. *Journal of Quantitative Analysis in Sports*, 18(3), 171-186. [\[publication\]](#)
- Nahata, S., **Deb, S.** (2021) A Machine Learning Approach to Analyze the Effect of Situational and Player-Dependent Features on Converting Freekicks in Soccer. In *Conference Proceedings 2021 Asia-Singapore Conference on Sport Science* (p. 19). [\[publication\]](#)
- **Deb, S.**, Tsay, R. S. (2019). Spatio-temporal Models with Space-time Interaction and Their Applications to Air Pollution Data. *Statistica Sinica*, 29, 1181-1207. [\[publication\]](#)
- **Deb, S.**, Dey, D. (2019). Spatial Modeling of Shot Conversion in Soccer to Single out Goalscoring Ability. *Journal of Sports Analytics*, 5(4), 281-297. [\[publication\]](#)
- **Deb, S.** (2019). VAR Model Based Clustering Method for Multivariate Time Series Data. *Journal of Mathematical Sciences*, 237(6), 754-765. [\[publication\]](#)
- Prickett, K.C., Gutierrez, C., **Deb, S.** (2019). Family Firearm Ownership and Firearm-related Mortality among Young Children: 1976-2016. *Pediatrics*, 143(2), e20181171. [\[publication\]](#)
- Chazin, H., **Deb, S.**, Falk, J., Srinivasan, A. (2019). New Statistical Approaches to Intra-individual Isotopic Analysis and Modelling of Birth Seasonality in Studies of Herd Animals. *Archaeometry*, 61(2), 478-493. [\[publication\]](#) [\[R package\]](#)
- **Deb, S.**, Pourahmadi, M., Wu, W. B. (2017). An Asymptotic Theory for Spectral Analysis of Random Fields. *Electronic Journal of Statistics*, Vol. 11, No. 2, p. 4297-4322. [\[publication\]](#)
- Zechner, C., **Deb, S.**, Koepll, H. (2013). Marginal Dynamics of Stochastic Biochemical Networks in Random Environments. In *Control Conference (ECC), 2013 European*, p. 4269-4274, IEEE. [\[publication\]](#)

PREPRINTS &  
SUBMITTED  
ARTICLES

- **Deb, S.**, Neves, C., Roy, S. (2025+) Nonparametric quantile regression for spatio-temporal processes. Under review. [\[preprint\]](#)
- Roy, A., Podder, M., **Deb, S.** (2025+) Nonparametric method of structural break detection in stochastic time series regression model. Under review. [\[preprint\]](#)
- Panja, M., Chakraborty, T., Biswas, A., **Deb, S.** (2025+) E-STGCN: Extreme Spatiotemporal Graph Convolutional Networks for Air Quality Forecasting. Under revision. [\[preprint\]](#)
- Rawat, S., Durrant, A., Simpson, A., Nielson, G., Berrett, C, **Deb, S.** (2023+) A Bayesian approach to identify changepoints in spatio-temporal ordered categorical data: An application to COVID-19 data. Currently being prepared for submission. [\[preprint\]](#)
- Bag, S., Gupta, K., **Deb, S.** (2022+). A review and recommendations on variable selection methods in regression models for binary data. Under resubmission. [\[preprint\]](#)

TEACHING

**Course instructor**, at Indian Institute of Management Bangalore:

- Decision Sciences I (Core for MBA students) Fall, 2020 – 2025
- Sports Analytics (Elective for MBA students) Fall, 2023 – 2025
- Advanced Statistics for Business (Core for BBA students) Winter, 2025
- Nonparametric Statistics (Core for PhD students) Spring, 2025
- Multivariate Statistics (Core for PhD students) Spring, 2021 – 2024
- Advanced Statistical Methods & Computing (Core for PhD students) Fall, 2024
- Statistical Inference (Core for PhD students) Winter, 2020

**Executive Education Programme**, at Indian Institute of Management Bangalore:

- Data Science & Artificial Intelligence (Co-director) 2025 – 2026
- IIMB-CREDAI Business Leadership Programme (Co-director) 2025 – 2026
- Predictive Analytics for Business Forecasting (Co-director) Jan 2026
- Data Science & Artificial Intelligence (5 sessions) Sep 2024
- MDP for Food Corporation of India (8 sessions) Apr 2024
- Business Analytics and Intelligence (3 sessions) Fall, 2022 – 2024

**Course instructor**, at University of Chicago:

- Introductory Statistics, Chicago Academic Achievement Program (UG) Summer, 2015 & 2017
- Statistical Models and Methods I (UG) Winter, 2015

CONSULTING  
SERVICES

- National Foundation for Corporate Governance, Ministry of Corporate Affairs, India** 2025
  - Topic: Feedback survey and concurrent evaluation of the Prime Minister Internship Scheme.
- Smart City Mission, Ministry of Housing & Urban Affairs, India** 2024
  - Topic: Improvement in quality of education through smart classrooms.
- DBS Bank, Singapore** 2023
  - Topic: Value of data joint study.
- Real Estate Research Initiative (IIMB-RERI), Bengaluru, India** Since 2023
  - Topic: Developing a commercial rental index through spatial modeling.
- SportsKPI, Bengaluru, India** 2022-23
  - Topic: Valuation of a Kabaddi player and its use in building strategies.

LATEST  
SEMINARS

- **Dec 2025.** Bridging search behavior and market dynamics: A hybrid model for high-frequency financial data. CFE-CMStatistics Conference, London, UK.
- **Dec 2025.** Real-time forecasting in football matches. Liverpool Management School, Liverpool, UK.
- **May 2025.** Data Handling, Visualisation, and Storytelling in Academic Research. Workshop-cum-training session at RV University, Bengaluru, India.
- **Dec 2024.** Nonparametric Regression of Spatio-temporal Data using Infinite-dimensional Covariates. IISA Conference 2024, Cochin, India.

- **Dec 2024.** Structural breaks in the spatial network of real estate dynamics: A study of UK property transactions. Essex Data Science Seminar Series, University of Essex, Colchester, UK.
  - **Sep 2024.** Nonparametric changepoint detection in time series data. COMPSTAT 2024, Giessen, Germany.
  - **Jul 2024.** A divide-and-conquer approach for spatio-temporal analysis of large house price data from Greater London. EcoSta Conference 2024, Beijing, China.
  - **Jul 2024.** A workshop on ‘Data summarisation and Visual Storytelling using Statistics’, PES University Research Workshop Series, Bengaluru, India.
  - **Jun 2024.** Real-time forecasting in sports. AI Frontiers Series, Commonwealth Bank of Australia (virtual).
  - **May 2024.** A workshop on Sports Analytics. Conference on Excellence in Research & Education, Indian Institute of Management Indore, India.

## HONORS

At Indian Institute of Management Bangalore:



## At University of Chicago:

- International House Ralph W. Nicholas Fellowship 2017-18
  - Graduate Council Travel Fund Award 2017
  - Runner-up for Department of Statistics Consulting Award 2016
  - Nominated for Best Teaching Assistant in Physical Sciences Division Winter 2014

#### **Earlier awards:**

- Kishore Vaigyanik Protsahan Yojana scholarship, Indian Institute of Science 2007 to 2013
  - Selected for International Mathematical Olympiad Training Camp, India 2007 & 2008

PROFESSIONAL Administrative roles, at Indian Institute of Management Bangalore:

## SERVICES

- Chairperson, Decision Sciences Area. Apr 2024 - present
  - Doctoral Program Coordinator, Decision Sciences Area. 2023-24
  - Mentor in Pre-doctoral Programme, Decision Sciences Area. 2021 - 2024

**Editorial Board member**, for the following journal:

- Journal of Sports Analytics, Associate Editor. 2025 – present
  - Sankhya B, Associate Editor. 2025 – present
  - Nature Scientific Reports, Associate Editor in the Climate Change track. 2024 – present

**Session chairs**, at the following conferences:

- CFE-CMStatistics Conference, London, UK Since 2021
  - IISA Conference, Cochin, India. Dec 2024
  - EcoSta 2024, Beijing, China Jul 2024
  - EcoSta 2023, Tokyo, Japan Aug 2023

**Reviewer**, for many journals including the following:

- Annals of Applied Statistics, Biometrics, Electronic Journal of Statistics, Journal of Multivariate Analysis
  - Journal of the American Statistical Association, Journal of the Royal Statistical Society
  - Journal of Sports Analytics, Sankhya A and Sankhya B, Statistics and Probability Letters

## SKILLS

### Technical strength:

- Proficient: R, MATLAB, L<sup>A</sup>T<sub>E</sub>X, Microsoft Office, Google Suite
  - Working knowledge: Python, SQL, C, C++

## Languages:

- Bilingual: English, Bengali; Intermediate: Hindi; Basic: Portuguese.