

Soudeep Deb

CURRENT POSITION	Associate Professor and Chairperson Decision Sciences Area Indian Institute of Management Bangalore, India.	Webpage: soudeepd.github.io Phone: +91 80-26993387 E-mail: soudeep@iimb.ac.in
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	Indian Institute of Management Bangalore , Bengaluru, KA, India. <ul style="list-style-type: none">Chairperson, Decision Sciences Area.Associate Professor, Decision Sciences Area.Assistant Professor, Decision Sciences Area. NBC Universal Media, LLC. , New York, NY, USA. <ul style="list-style-type: none">Senior Lead Data Scientist, Decision Sciences Division.	Mar 2020 - Present Apr 2024 - Present Jul 2024 - Present Mar 2020 - Jul 2024 Sep 2018 - Feb 2020
EDUCATION	University of Chicago , Chicago, IL, USA. Ph.D., Statistics <ul style="list-style-type: none">Thesis: Irregular spaced random field, Spatio-temporal data and Clustering of time seriesAdvisory committee: Dr. Wei Biao Wu, Dr. Ruey S. Tsay, Dr. Michael L. Stein Indian Statistical Institute , Kolkata, WB, India. Master of Statistics (M. Stat.) <ul style="list-style-type: none">First Division with Distinction, Specialization: Mathematical Statistics and ProbabilityThesis: Association analysis for identifying rare genetic variants, Advisor: Dr. Saurabh Ghosh Bachelor of Statistics (B. Stat.) <ul style="list-style-type: none">First Division with Distinction	Aug 2018 May 2013 May 2011
DOCTORAL STUDENTS	PhD thesis advisor/co-advisor: <ul style="list-style-type: none">Anchal Soni, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Methods of analyzing structural breaks in multivariate time series: Applications to financial data.Siddharth Rawat, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Spatio-temporal models in epidemiology and climate change.Kapil Gupta, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Analyzing house price dynamics using novel spatio-temporal methods.Archi Roy, Dept of Mathematics, Indian Institute of Science Education & Research Pune. Thesis: Nonparametric methods for short and long-range dependent time series: Applications in financial and biomedical datasets.Kunal Rai, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Nonparametric methods and PINN in quantile regression for time series data.Chinmay Divekar, Decision Sciences, Indian Institute of Management Bangalore. Thesis: Novel methods for within-game analytics in sports. Doctoral committee member: <ul style="list-style-type: none">M Mareeswaran, Finance & Accounting, Indian Institute of Management Bangalore.Sajad S Santhosh, Public Policy, Indian Institute of Management Bangalore.Sabhya Rai, Economics, Indian Institute of Management Bangalore.	Feb 2023 May 2023 Mar 2025 Aug 2025 (Exp) 2026 (Exp) 2026 Mar 2025 Jul 2025 (Exp) 2026
BOOKS	<ul style="list-style-type: none">(With S. Das) Business Analytics: Data to Decisions. First edition in 2025, published by Universities Press (India) Private Limited. ISBN: 9789393330994. [Amazon link](With D. Dey) Mathematical Techniques for Competitive Examinations. First edition in 2023, published by Orient Blackswan Pvt Ltd. ISBN: 9393330107. [Amazon link]	

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

- Sen, S., **Deb, S.** (2025) tSNE-Spec: A new classification method for multivariate time series data. To appear in the Journal of Multivariate Analysis. Preprint available on request.
- Gupta, K., **Deb, S.** (2025) A divide-and-conquer approach for spatio-temporal analysis of large house price data from Greater London. To appear in the Annals of Operations Research. [\[preprint\]](#)
- **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. To appear in the Japanese Journal of Statistics and Data Science. [\[publication\]](#)
- **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.**, Chakarwarty, 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., Guterrez, 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.**, Koepl, H. (2013). Marginal Dynamics of Stochastic Biochemical Networks in Random Environments. In *Control Conference (ECC), 2013 European*, p. 4269-4274, IEEE. [\[publication\]](#)
- **Deb, S.**, Neves, C., Roy, S. (2024+) Nonparametric quantile regression for spatio-temporal processes. Under review. [\[preprint\]](#)
- Roy, A., Podder, M., **Deb, S.** (2024+) Nonparametric method of structural break detection in stochastic time series regression model. Under review. [\[preprint\]](#)
- Panja, M., Chakraborty, T., Biswas, A., **Deb, S.** (2024+) 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. [\[preprint\]](#)

PREPRINTS &
SUBMITTED
ARTICLES

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
	• 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, 10+ sessions)	2025 – 2026
	• IIMB-CREDAI Business Leadership Programme (Co-director, 2 sessions)	2025 – 2026
CONSULTING SERVICES	• Predictive Analytics for Business Forecasting (Co-director, 5+ sessions)	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
	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
LATEST SEMINARS	• 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.	
	• Data Handling, Visualisation, and Storytelling in Academic Research. Workshop-cum-training session at RV University, Bengaluru, India.	May 2025
	• Real-time forecasting in football matches. IIMA R&P Seminar Series, Ahmedabad, India.	Feb 2025
	• 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.	Dec 2024
	• Structural breaks in the spatial network of real estate dynamics: A study of UK property transactions. CMStatistics Conference 2024, London, UK.	Dec 2024
	• Nonparametric changepoint detection in time series data. COMPSTAT 2024, Giessen, Germany.	Sep 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.	Jul 2024
	• Real-time forecasting in sports. AI Frontiers Series, Commonwealth Bank of Australia (virtual).	Jun 2024
	• A workshop on Sports Analytics. Conference on Excellence in Research & Education, Indian Institute of Management Indore, India.	May 2024
	• Introduction to Bayesian methods in Econometrics and Statistics. IIMK Skill-Building Series (virtual), Kozhikode, India.	Mar 2024

HONORS	At Indian Institute of Management Bangalore:	
	• Excellence in Teaching Recognition	Multiple years since 2022
	At University of Chicago:	
	• International House Ralph W. Nicholas Fellowship	2017-18
	• Graduate Council Travel Fund Award	2017
PROFESSIONAL SERVICES	• 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
	Administrative roles , at Indian Institute of Management Bangalore:	
	• 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	
SKILLS	• Biometrics	
	• Electronic Journal of Statistics	
	• IIMB Management Review	
	• Journal of Multivariate Analysis	
	• Journal of Sports Analytics	
	• Journal of the American Statistical Association	
	• Journal of the Royal Statistical Society: Series A and Series C	
	• Sankhya A and Sankhya B	
	• Scientific Reports	
	• Statistics and Probability Letters	
	Technical strength:	
	• Proficient: R, MATLAB, L ^A T _E X, Microsoft Office, Google Suite	
	• Working knowledge: Python, SQL, C, C++	
	Languages:	
	• Bilingual: English, Bengali; Intermediate: Hindi; Basic: Portuguese.	