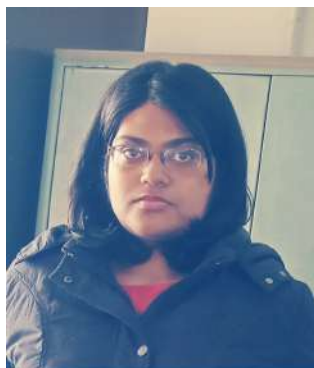


Curriculum-Vitae



Updated: Friday 11th March, 2022

Name: **Dr. SOUMITA MODAK**

Designation: Faculty of Statistics

Affiliation: Basanti Devi College, University of Calcutta, Kolkata

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Qualifications

- Ph.D. in Statistics, University of Calcutta, Kolkata, 2019
 - Title of thesis: [Uncovering astrophysical phenomena related to galaxies and other objects through statistical analysis](#)
 - Supervisors: [Prof. Asis Kumar Chattopadhyay](#), [Prof. Tanuka Chattopadhyay \(Kanjilal\)](#) and Late Prof. Uttam Bandyopadhyay.
- M.Sc. in Statistics, University of Calcutta, 2012
- B.Sc. in Statistics, St. Xavier's College (Autonomous), Kolkata under University of Calcutta, 2010

Research Interests

Applied Statistics, Cluster Analysis, Nonparametric Statistics, High-dimensional data analysis, Astrostatistics

Courses taught

Descriptive Statistics, Linear Algebra, Mathematical Analysis, Probability Theory, Stochastic Processes and Queuing Theory, Index Numbers and Time Series Analysis, Demographic Methods, Statistical Quality Control, Design of Experiments, Statistical Inference, Statistical Data Analysis using R

Positions held/holding

1. Faculty, Department of Statistics, Basanti Devi College, Affiliated under University of Calcutta, Kolkata (2018 – till date)
2. Visiting Research Scholar, Inter-University Centre for Astronomy and Astrophysics, Pune (2013)
3. Ph.D. Research Scholar, Department of Statistics, University of Calcutta, Kolkata (2012 – 2018)

Journal Publications

1. **Soumita Modak*** (2022), [A new measure for assessment of clustering based on kernel density estimation](#), Communications in Statistics - Theory and Methods , Doi: <https://doi.org/10.1080/03610926.2022.2032168>
2. **Soumita Modak***, Tanuka Chattopadhyay and Asis Kumar Chattopadhyay (2022), [Clustering of eclipsing binary light curves through functional principal component analysis](#), Astrophysics and Space Science, Volume 367, Article id 19
3. **Soumita Modak*** (2022), [A new nonparametric interpoint distance-based measure for assessment of clustering](#), Journal of Statistical Computation and Simulation, 92, 1062-1077

4. **Soumita Modak*** (2021), [Distinction of groups of gamma-ray bursts in the BATSE catalog through fuzzy clustering](#), *Astronomy and Computing*, Volume 34, Article id 100441
5. **Soumita Modak***, Tanuka Chattopadhyay and Asis Kumar Chattopadhyay (2020), [Unsupervised classification of eclipsing binary light curves through k-medoids clustering](#), *Journal of Applied Statistics*, 47, 376-392
6. **Soumita Modak** and Uttam Bandyopadhyay (2019), [A new nonparametric test for two sample multivariate location problem with application to astronomy](#), *Journal of Statistical Theory and Applications*, 18, 136-146
7. **Soumita Modak***, Asis Kumar Chattopadhyay and Tanuka Chattopadhyay (2018), [Clustering of gamma-ray bursts through kernel principal component analysis](#), *Communications in Statistics - Simulation and Computation*, 47, 1088-1102
8. Uttam Bandyopadhyay and **Soumita Modak*** (2018), [Bivariate density estimation using normal-gamma kernel with application to astronomy](#), *Journal of Applied Probability and Statistics*, 13, 23-39
9. **Soumita Modak***, Tanuka Chattopadhyay and Asis Kumar Chattopadhyay (2017), [Two phase formation of massive elliptical galaxies: study through cross-correlation including spatial effect](#), *Astrophysics and Space Science*, Volume 362, Article id 206
10. Krishnendra S. Ganguly, **Soumita Modak***, Krishna S. Ganguly and Asis Kumar Chattopadhyay (2016), [Study on Temporal Effects of Urban Malaria Incidences](#), *International Journal of Statistics in Medical Research*, 5, 120-132
11. Krishnendra S. Ganguly, **Soumita Modak**, Asis Kumar Chattopadhyay, Krishna S. Ganguly, Tapan K. Mukherjee, Ambar Dutta, and Debashis Biswas (2016), [Forecasting Based On a SARIMA Model of Urban Malaria for Kolkata](#), *American Journal of Epidemiology and Infectious Disease*, 4, 22-33

Citations

1. [Google Scholar](#)
 - Citations: 61; h-index: 5; i10-index: 3
2. [Researchgate](#)
 - Total Citations: 81; Score: 8.85

Awards and Honors

1. Life Member, International Astrostatistics Association, since 2016
2. Life Member, Indian Association of Productivity, Quality & Reliability, since 2021
3. Life Member, Calcutta Statistical Association, since 2012
4. Peer Reviewer of the 5th International Conference on Fuzzy Systems and Data Mining (FSDM 2019) held in Kitakyushu City, Japan, 2019
5. Bose-Nandi National Award twice from Calcutta Statistical Association for research work
6. UGC Fellowship for doing Ph.D. research work in the Department of Statistics, University of Calcutta

Oral presentation in Seminar/Conference/Webinar

- Online
 1. Clustering of eclipsing binary light curves through functional principal component analysis, National Webinar on 'Recent Advances in Mathematics and Its Applications' (RAMA - 2022), Department of Pure Mathematics, University of Calcutta, Kolkata, 2022
 2. Distinction of groups of gamma-ray bursts in the BATSE catalog through fuzzy clustering, Webinar on Recent Advances in Applied Mathematics: Theory and Computation, Department of Applied Mathematics, University of Calcutta, Kolkata, 2021

- International
 1. Study on Temporal Effects of Urban Malaria Incidences, International Seminar on Sustainable Development and Inclusive Growth: Methods to Methodology, Lady Brabourne College affiliated with University of Calcutta, Kolkata, 2020
 2. Clustering of eclipsing binary light curves through functional principal component analysis, International Conference on Strategic Management, Decision Theory and Data Science, CSIR–CGCRI, Kolkata, 2020
 3. Unsupervised classification of eclipsing binary light curves through k-medoids clustering, Tenth International Triennial Calcutta Symposium on Probability & Statistics, Department of Statistics, University of Calcutta, Kolkata, 2018
 4. Clustering of gamma-ray bursts through kernel principal component analysis, International Conference on New Paradigms in Statistics for Scientific and Industrial Research, CSIR–CGCRI, Kolkata, 2018
 5. Two phase formation of massive elliptical galaxies- study through spatio parametric cross-correlation, Platinum Jubilee International Conference on Application of Statistics, Department of Statistics, University of Calcutta, Kolkata, 2016
 6. Clustering of Gamma-Ray Bursts, Ninth International Triennial Calcutta Symposium on Probability & Statistics, Department of Statistics, University of Calcutta, Kolkata, 2015
- National
 - Unsupervised classification of eclipsing binary light curves through k-medoids clustering, National Seminar on Applications of Statistics in Natural Sciences, St. Xavier’s College (Autonomous), Kolkata, 2019
- State-level
 1. Two phase formation of massive elliptical galaxies- study through cross-correlation including spatial effect, STAT QUEST, Department of Statistics, University of Calcutta, Kolkata, 2019

2. Bivariate density estimation using normal-gamma kernel with application to astronomy, STAT QUEST, Department of Statistics, University of Calcutta, Kolkata, 2018
3. Two sample multivariate location problem to test compatibility of astronomical observations, STAT QUEST, Department of Statistics, University of Calcutta, Kolkata, 2017
4. Study on temporal effects of urban malaria incidences, STAT QUEST, Department of Statistics, University of Calcutta, Kolkata, 2016
5. Clustering of Gamma-Ray Bursts, STAT QUEST, Department of Statistics, University of Calcutta, Kolkata, 2015
6. Classification of Variable Stars, STAT QUEST, Department of Statistics, University of Calcutta, Kolkata, 2014

Academic activities

1. Duties assigned by University of Calcutta for undergraduate Statistics exams: Paper Setter, Examiner, Scrutineer (2019-2022)
2. Member of organizing committee, Seminar on ‘Lectures on Linear Algebra and Probability Theory’, Department of Statistics, Basanti Devi College, Kolkata, 2019
3. Assistant course coordinator for online refresher course under ‘Swayam’ platform on ‘Computational Mathematics and Statistics with Data Integration and Analysis’, University of Calcutta (National Resource Center), 2018–2019
4. Coordinator of Technical Session, International Conference on New Paradigms in Statistics for Scientific and Industrial Research, CSIR–CGCRI, Kolkata, 2018
5. Member of Sub-Committee, 9-th International Triennial Calcutta Symposium on Probability and Statistics, Department of Statistics, University of Calcutta, Kolkata, 2015

Workshop/Seminar/Webinar participation

- Workshops
 1. Workshop on Machine Learning for Post Graduate Statistics Students and Young Researchers, organized by Department of Statistics, University of Calcutta, Kolkata, 2018
 2. Introductory Workshop on Astrophysics and Cosmology, organized by Aliah University, Kolkata and IUCAA Resource Centre, Kolkata, 2016
 3. Introductory Workshop on Virtual Observatory, organized by University of Calcutta and IUCAA Resource Centre, Kolkata, 2012

- Seminars
 1. National Seminar on Application of Statistics & Statistical Computing, organized by Xaverian Statistical Association under Department of Statistics, St. Xavier's College (Autonomous), Kolkata, 2013
 2. Eighth International Triennial Calcutta Symposium on Probability & Statistics, organized by Department of Statistics, University of Calcutta and Calcutta Statistical Association, 2012
 3. Interaction Session on Clinical Trials conducted by Cytel Statistical Software and Service Pvt. Ltd. during the Eighth International Triennial Calcutta Symposium on Probability and Statistics, organized by Department of Statistics, University of Calcutta and Calcutta Statistical Association, 2012

- Webinars
 1. Lecture Series for Propagation of Statistics Education and Research: Inaugural talk by Prof. Shyama Prasad Mukherjee, Former Centenary Professor of Statistics, University of Calcutta, on the topic 'Some Problems in Using Stratified Sampling', organized by Calcutta Statistical Association (outreach program), Kolkata, July 2, 2021
 2. Webinar on COVID-19 modeling: Predictions, Role of Interventions and the Crisis of Virus in India – A Data Science Call to

Arms, hosted by Calcutta Statistical Association, Kolkata, February 20, 2021

3. National Webinar on Data Driven Research in Mathematics & Statistics, hosted by the Department of Mathematics, Janardan Rai Nagar Rajasthan Vidyapeeth (Deemed-to-be University), Udaipur, 2020

Extracurricular activities

Entrepreneurship Awareness Camp at St. Xavier's College, Kolkata, organized by Entrepreneurship Development Cell, Department of Science & Technology, Government of India during 19–21 February, 2010 and 12–14 March, 2010