

ARITRA SENGUPTA

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CURRENT

Economic and Financial Modeling Senior
Credit and House Price Models
Single Family Risk Management
Modeling, Econometrics, Data Science & Analytics
Federal Home Loan Mortgage Association (Freddie Mac), McLean, VA

EDUCATION

- PhD, Department of Statistics, The Ohio State University, 2012.
 - *Advisor*: Dr. Noel Cressie.
 - *Thesis*: Empirical Hierarchical Modeling and Predictive Inference for Big, Spatial, Discrete, and Continuous Data.
- M.Sc. Statistics, Indian Institute of Technology, Kanpur, 2007.
- B.Sc. Statistics, Calcutta University (India), 2005.
 - *Minors*: Maths and Physics.

RESEARCH INTERESTS

- Spatial Statistics and Spatio-Temporal Modeling.
- Bayesian Methods and its Applications.
- Analysis of Network Data.
- Time Series Models.
- Econometric Models.

PROJECTS, INTERNSHIPS, AND OTHER PROFESSIONAL EXPERIENCE**Research Associateship with Dr. Noel Cressie, at The Ohio State University**

- Spatial-Random-Effects (SRE) Modeling for Cloud Data. [*July, 2011 - December, 2011, and April, 2012 - August, 2012*]
This research involves analysis of the MODIS cloud mask data. The goal of this research has been to quantify the uncertainty in the data and to produce optimal predictions of the cloud-probability process, along with measures of its uncertainty.
- Statistical Analysis of Network Data. [*October, 2010 - December, 2010*]
Work included reading the literature on Network Data, preparing a report, and formulating statistical research problems.

Internship with the Analytics Team at the Retail Financial Services, Chase Bank, Columbus, OH, USA.*[June, 2010 - September, 2010]*

- *Project Title:* Determining the capacity of a market for more ATM placement.

Project with the Division of Mathematical and Information Sciences (CMIS), Marine Labs in Hobart, CSIRO, Australia.*[July, 2009 - September, 2009]*

- *Title :* Location error in Kalman filter updates for ocean data assimilation schemes, using data from animal tags.
- *Project Supervisors :* Dr. Mark Bravington, CMIS, CSIRO; Dr. Scott Foster, CMIS, CSIRO.

MSc Project, IIT Kanpur, India.*[January, 2007 - April, 2007]*

- *Title :* M-Estimation of the parameters of a linear compartment model using a genetic algorithm.
- *Project Supervisor :* Dr. Amit Mitra, Professor, IIT Kanpur, India.

TEACHING EXPERIENCE**Teaching Assistantship at The Ohio State University [*September, 2007 - December, 2012*]****Recitation Instructor :**

- Stat 2450 : Introduction to Statistical Analysis I. [*Fall 2012.*]
- Stat 145 : Introduction to the Practice of Statistics. [*Winter 2008 - Fall 2008, Spring 2009, Fall 2009, Winter 2010, Fall 2010, Winter 2011, Fall 2011, Winter 2012.*]
- Stat 135 : Elementary Statistics. [*Winter 2009.*]

Course Grader :

- Stat 528 : Data Analysis-I. [Fall 2007.]
- Stat 602 : Early Start in Statistics. [Summer 2008]
- Stat 631 : Introduction to Spatial Statistics. [Spring 2009, Spring 2011]
- Stat 662 : Environmental Statistics. [Spring 2010, Spring 2012]
- Stat 829 : Spatial Statistics. [Spring 2010]
- Stat 825 : Advanced Bayesian Analysis. [Spring 2011]
- Stat 743 : Generalized Linear Models. [Winter 2012]

COMPUTING SKILLS

- Statistical Software used: R, SAS, Matlab, MINITAB, JMP
- SAS Certified Base Programmer for SAS 9. (Certification obtained September 10, 2010)
- Proficient in Word and L^AT_EX
- Programming Languages: Basic knowledge on C, C++.
- Operating Systems: Windows, Linux

ONLINE CERTIFICATIONS

- **Machine Learning.** Coursera Course Certificates; License number-S53G4FTHATXB. (Certification obtained April 2016)
- **Financial Markets.** Coursera Course Certificates; License number-9GVX8GYZRCY8. (Certification obtained April 2016)
- **The Power of Macroeconomics: Economic Principles in the Real World.** Coursera Course Certificates; License number-54UYMH5AUQ3K. (Certification obtained February 2016)

PUBLICATIONS**PhD Thesis**

- **Sengupta, A.** (2012). "Empirical Hierarchical Modeling and Predictive Inference for Big, Spatial, Discrete, and Continuous Data." Doctoral Dissertation, Department of Statistics, The Ohio State University, Columbus, OH.

Refereed

- **Sengupta, A.**, Cressie, N., Kahn, B. H., and Frey, R. (2016). "Predictive inference for big, spatial, non-Gaussian data: MODIS cloud data and its change-of-support." *Australian and New Zealand Journal of Statistics*, **58**, 15-45.
- **Sengupta, A.**, and Cressie, N. (2013). "Empirical hierarchical modeling for count data using the Spatial Random Effects model." *Spatial Economic Analysis*, **8**, 389-418.
- **Sengupta, A.**, and Cressie, N. (2013). "Hierarchical statistical modeling for big spatial datasets using the exponential family of distributions." *Spatial Statistics*, **4**, 14-44.
- Peterson E. E., et al. (15 co-authors, including **Sengupta, A.**). (2013). "Modeling dendritic ecological networks in space: An integrated network perspective." *Ecology Letters*, **16**, 707-719.
- **Sengupta, A.**, Foster, S. D., Patterson, T. A., and Bravington, M. (2012). "Accounting for location error in Kalman filters: Integrating animal borne sensor data into assimilation schemes." *PLoS ONE*, **7**, e42093.

Unrefereed

- **Sengupta, A.**, Cressie, N., Frey, R., and Kahn, B. H. (2012). "Statistical modeling of MODIS cloud data using the Spatial Random Effects model." In *Proceedings of the 2012 Joint Statistical Meetings*, Alexandria, VA: American Statistical Association, 3111-3123.

PRESENTATIONS**Talks:**

- "Hierarchical statistical modeling for big spatial datasets using the exponential family of distributions;" Whitney Research Award Seminar, Department of Statistics, The Ohio State University, Columbus, OH, USA. *Apr 2013*
- "Predictive Inference from Count Data - Big Datasets and the use of Hierarchical Models;" Models, Mission and Research Division, Freddie Mac, McLean, VA, USA. *Aug 2012*
- "A hierarchical GLM for cloud data using the Spatial Random Effects model;" Joint Statistical Meetings, San Diego, CA, USA. *Topic Contributed Paper; July 2012*
- "Empirical hierarchical modeling for counts using the Spatial Random Effects model;" Edward F. Hayes Graduate Research Forum, The Ohio State University, Columbus, OH, USA. *Feb 2012*
- "Statistical insights into paleoclimate reconstructions : Space-time separability of covariance functions and issues related to change-of-support;" Discussion Group on Paleoclimate Data and Models, Department of Statistics, The Ohio State University, Columbus, OH, USA. *Feb 2012*
- "Empirical-Bayesian inference for count data using the Spatial Random Effects model;" Joint Statistical Meetings, Miami Beach, FL, USA. *Aug 2011*

- "Generalized linear Spatial Random Effects model;" Joint Statistical Meetings, Vancouver, Canada. *Aug 2010*
- "Location error in Kalman filter updates for oceanographic models, using data from animal tags;" SSES Brown Bag Seminar, Department of Statistics, The Ohio State University, Columbus, OH, USA. *Oct 2009*
- "Data assimilation with animal tag data: Handling location error in Kalman filter updates;" Division of Mathematical and Information Sciences, CSIRO, Hobart, Australia. *Sept 2009*

Posters:

- "Hierarchical spatial modeling for the exponential family using the Spatial Random Effects model;" SSES Conference on Spatial and Environmental Statistics, Department of Statistics, The Ohio State University, Columbus, OH, USA. *Apr 2012*
- "Hierarchical modeling for counts using the Spatial Random Effects model;" SAMSI Uncertainty Quantification: Observations Workshop, Asheville, NC, USA. *Jan 2012*
- "Empirical hierarchical model for counts using the Spatial Random Effects model;" Statistical Climatology Poster Session, Department of Statistics, The Ohio State University, Columbus, OH, USA. *Oct 2011*

SERVICE**Refereeing**

- Reviews for European Journal of Soil Science (1), Spatial Statistics (1), PLoS One (1), The Annals of Regional Science (1), and Scientific Research and Essays (1).

At Ohio State

- Delegate (from the Department of Statistics) to the Council of Graduate Students, OSU. *July 2011 - June 2012*
- Volunteer for 2011 OUAB Welcome Week Picnic (*Sept 2011*), and 2012 Annual Hayes Form (*Feb 2012*).
- Judge, Ohio State Science Fair; Columbus, OH. *May 2011*
- Member, Graduate Recruitment Committee, Department of Statistics, The Ohio State University. *Jan 2011 and Jan 2008*
- TA mentor for new STAT 145 afternoon TA-s at the Department of Statistics, The Ohio State University. *Fall 2010*
- Volunteer for Asian Festival 2010, held in Columbus, Ohio. *May 2010*

HONORS AND AWARDS

- Ransom & Marian Whitney Award for Best Dissertation Research; Department of Statistics, The Ohio State University. (*Apr 2013*)
- Gary Koch Travel Award (from the Department of Statistics, The Ohio State University) to attend the Joint Statistical Meetings in San Diego, CA, USA (*July 2012*), the Joint Statistical Meetings in Miami Beach, FL, USA (*Aug 2011*) and the Joint Statistical Meetings in Vancouver, Canada (*Aug 2010*).
- Ranked second among all the students of the Statistics Department of IIT Kanpur (MSc, 2007)
- Received the Ahibhusan Chatterjee Memorial Prize for the second best performance among the Statistics students of the Undergrad College (the Presidency College, Calcutta University) in the statistics honours exam (BSc, 2005)

ORGANIZATIONS

- American Statistical Association.

REFERENCE

Available on Request.

Last updated: May 3, 2016