Sayar Karmakar

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(Current) Assistant Professor of Statistics, University of Florida

Ph.D., University of Chicago, June 2018

Master of Statistics, Indian Statistical Institute, 2013.

Bachelor of Statistics , Indian Statistical Institute, 2011.

Research

Updates: https://sayarkarmakar.github.io/pages/pubs.html

Published Journal Articles

1. Optimal Gaussian approximation under dependence:(2019+) **Sayar Karmakar**, Wei Biao Wu; Accepted in *Statistica Sinica*. To be presented in Statistica Sinica Invited Papers Session JSM 2020.

   Link: http://www3.stat.sinica.edu.tw/ss_newpaper/SS-2017-0303_na.pdf

   Link: https://sayarkarmakar.github.io/publications/sayar2.pdf

2. Long term prediction intervals of economic time-series:(2019+) Marek Chudy*, **Sayar Karmakar***, Wei Biao Wu; Accepted in *Empirical Economics* [* equal contribution]

   Link: https://doi.org/10.1007/s00181-019-01689-2

3. Prediction intervals for high dimensional regression: **Sayar Karmakar**, Marek Chudy and Wei Biao Wu; (Submitted. Accepted for International Symposium of Forecasting. Invited session on SWEET pricing)

   Link: https://sayarkarmakar.github.io/publications/sayar4.pdf

Submitted Journal Articles

1. Simultaneous confidence bands of time-varying models: **Sayar Karmakar**, Stefan Richter, Wei Biao Wu; Revision requested by Journal of Econometrics.

   Link: https://sayarkarmakar.github.io/publications/sayar1.pdf

Journal Articles in Preparation

1. Comprehensive and simultaneous inference for multiple trend-seasonal models: Sayar Karmakar, Wei Biao Wu

   Preprint Manuscript: https://sayarkarmakar.github.io/publications/sayar6.pdf

2. Detection and test of synchronization of change-points in multiple time-series: Sayar Karmakar, Maggie Cheng, Wei Biao Wu.

   Preprint Manuscript: https://sayarkarmakar.github.io/publications/sayar5.pdf

3. Post-regularzied prediction intervals for high dimensional VAR models Sayar Karmakar, Mengyu Xu *in preparation*

4. Inference on models with non-Lipschitz and time-varying coefficients: Sayar Karmakar *in preparation*
5. Risk bounds for isotonic quantile regression: Sayar Karmakar, Sabyasachi Chatterjee *in preparation*
6. Community detection in regular SBM with multiple clusters. Sayar Karmakar, Moumanti Podder, Chris Hoffman
7. Robust two-sample mean tests in presence of outliers: Sayar Karmakar, Ayanendranath Basu
   Preprint Manuscript: `https://sayarkarmakar.github.io/publications/sayarrobust.pdf`
8. Multiscale statistics under scalar and spatial dependence: Sayar Karmakar, Bodhisattva Sen *in preparation*
9. A uniform framework for robust estimation: Sayar Karmakar, Abhik Ghosh *in preparation*

Presentations and Talks

Invited talk: TBA. IISA IIT Mumbai 2019 December

Invited talk: Post-regularized prediction intervals for VAR models. CFE CMStatistics. London 2019 December

Invited talk: Michigan State University Seminar talk: TBA. September 2019.

Contributed talk: Comprehensive inference on trend-cycle model. Colorado. JSM 2019.

Contributed talk: (peer-reviewed acceptance): Post-regularized prediction intervals for VAR models. IMS New researcher conference.

Invited talk: Simultaneous inference on time-varying models. IIM Bangalore July 2019.

Invited talk: Prediction intervals for high dimensional regression. 3rd international conference on economics and statistics. Taichung Ecosta 2019 June.

Talk at SWEET pricing invited session: (peer-reviewed acceptance) Prediction intervals for high dimensional regression. Thessaloniki ISF 2019.

Contributed poster: Time-aggregated forecasting for ultra high dimensional regression under dependence. Symposium on Data Science and Statistics, Seattle May 2019.

Invited talk: Long-term forecasting in high dimensional regression. Florida ASA Chapter. February 2019.

Contributed talk: Comprehensive simultaneous inference on time-varying models. Triennial symposium, Kolkata, December 2018

Invited talk: Comprehensive simultaneous inference on time-varying models. CMStatistics/ERCIM, University of Pisa , Italy (December 2018)

Poster: Comprehensive simultaneous inference on time-varying models. NSF-NBER peer reviewed conference. University of California San Diego September 2018

Poster: Optimal Gaussian approximation. International Indian Statistical Association, University of Florida, Gainesville. May 2018. Best poster award

Poster: Simultaneous inference on time-varying models. New Aspects of Statistics, Financial Econometrics, and Data Science. Booth School, University of Chicago. May 2018

Invited Talk: Simultaneous inference on time-varying models. *Indian Statistical Institute, Kolkata* Mar 2018

Invited Job Talk: Simultaneous inference on time-varying models *University of Florida, SAMSI, Temple University, Old Dominion University, University of Michigan, Bucknell University, Texas Christian University, University of Wisconsin, University of Nevada, Reno*

Invited Talk: Simultaneous confidence bands in time-varying coefficient models. *University of Illinois at Chicago* Oct 2017

Talk: Robust two-sample mean tests in presence of outliers. *Indian Statistical Institute* May, 2013

Poster: Clustering approach to identify clones in tumors *Young Statistician's conference* Melbourne, Feb 2013. 2nd prize winner.

Talk: High exome mutational burden in 58 African Americans with persistent extreme blood pressure *Institute of Genetic Medicine* Baltimore, June 2012

Poster: Statistical Methods to Identify clonal variations present in Tumour *Conference on Contemporary Issues and Applications of Statistics*, Kolkata, January 2012

Poster: Identification and differentiation between driver and passenger mutation applying clustering algorithm on next gen sequencing data. *61st ASHG meeting* Montreal, Canada, October 2011.

Talk: A brief review of geometric probability. *D. Basu Memorial Award*, Indian Statistical Institute, Kolkata, September 2011

Research Interests

Time series analysis, Dependent data analysis, Gaussian multiplier bootstrap, Simultaneous inference of regression model, Scan statistics, Tensor regression, Network analysis, Stochastic block model, Vector autoregressive model, Prediction inervals, Functional data analysis, Change-point analysis, Analyzing periodical and cyclical variations, Embedding and strong invariance principle, Econometrics, High dimensional statistics, Sparse graphs, Tournament problems, Robust statistics, Genetics

Statistics Consulting Experience

Effect of native /sign language on gesture pattern: Dinah Shender (Co-leader), Sayar Karmakar (Co-leader), Ye Tian, Fan Yang and Nuoya Zhou.

Grave Dating and Gender Roles: Mengyu Xu (Leader), Sayar Karmakar, Bo Luan

Effect of Rurality on Degree Attainment in College: Sayar Karmakar (Leader), Shan Lu

Chinese restaurant process to study inventor-patent relationships: Sayar Karmakar (Leader), Guanzhou Chen, Jinhan Ahn, Yangze Zhou.

Refereed Journals

Annals of Statistics(2), Electronic Journal of Statistics(1), Linear Algebra and its Applications(3), Statistics and Probability letters(3), Sankhya(1), Journal of multivariate analysis(1).

Awards

Statistics

Travel award for attending IMS New Researcher Conference, 2019, Colorado: 700$.

Travel award for attending Symposium on Data Science and Statistics, Seattle 2019: 500$

Best poster award IISA 2018 conference, Gainesville

Travel award for attending IISA 2018 conference: $350

Graduate travel award UChicago Grad Gargoyle 2017-18: $600

Runners up in the Statistics Consulting Program 2016-17 at University of Chicago.

Nominated for best tutor in Statistics in both 2014-15 and 2015-16 at the Core college tutoring program.

Debesh Kamal Scholarship, 2013: $1600

Deans list, Indian Statistical Institute, 2008-2013

2nd prize in poster, Young Statistician's Conference, Melbourne. 2013, (Organized by SSAI): $200 AUD

Travel award, ISI for attending YSC, Melbourne : $1200

USPROC 4th prize, 2011 (Organized by Consortium for the Advancement of Undergraduate Statistics Education, http://www.causeweb.org/usproc)

Travel award, ISI for research internship in JHU: $1500

Travel award, ISI for attending ASHG 2011 Montreal: $1500

IAS Summer Fellowship, 2011 to allow a review project on Geometric Probability under supervision of Prof. A. M. Mathai.

Others

KVPY scholarship, 2009-2013: $1000 for each year 2009-2011 $1500 for each year 2011-2013.

Rank 3, Regional Maths Olympiad, West Bengal, India 2012

Inspire Scholarship, 2010-2013

NCERT Scholarship, 2006-2008

Rank 1, National level Science Talent by "Jatiyo Biggyan Porishod" 2005

Top ranks in Statewise Mathematics talent by ADTM 2002-2007

Last updated: August 19, 2019