A Workshop on
Bayesian Statistics: From Applications to Theory, and From Theory to Applications

Organizer: Nabendu Pal   **Co-Organizer: Manisha Pal**

Friday, 23 February 2024 from 03:30 PM till 07:00 PM India time

A brief overview of the workshop

This pre-conference workshop is intended to give all participants, including non-statisticians as well as applied researchers, a primer of the rich theory which is the bedrock of Bayesian Analysis with plenty of applications. It is hoped that the junior participants, especially master and doctoral level students, can enhance their understanding on this important school of thoughts which permeates every branch of statistics. The workshop is designed to have two segments, each lasting about 90 minutes (75 mins of presentation and 15 mins of questions / discussions) with 30 minutes break in between.

Workshop date and time
Friday, February 23, 2024

Opening	03:30 PM	03:45 PM
Session - I	03:45 PM	05:15 PM
Break	05:15 PM	05:45 PM
Session - II	05:45 PM	07:15 PM
Closing	07:15 PM	07:20 PM

Target audience

Master and doctoral level statistics students; applied researchers, including data analysts, from disciplines other than statistics who would like to know the foundational concepts of Bayesian Analysis.

Session - I: Basics of Bayesian Theory: From Applications to the General Theory

Think of the harrowing days of Covid-19. Suppose you have just used a quick Rapid Antigen Test, and it turns out to be a positive one. Should the sky befall on your head? Welcome to Bayesian Statistics and take a guided tour of the general Bayesian theory, both in a parametric as well as nonparametric set up.

Specific topics to be covered, but not limited to

The concept of the prior and posterior distributions, Bayes risk, Bayes Expected Loss (BEL), Noninformative prior in the face of absolutely no prior information, the concept of Empirical Bayes Analysis, Bayesian Predictive Inferences.

Session - II: Challenges in Bayesian Statistics: From Gibbs Sampling to MCMC Algorithm with Applications

The fundamental concept of the Bayesian theory is that of the posterior (probability) distribution, but then it turns out to be a nightmare when the data has a complicated probability distribution and/or has a large number of parameters. In this regard sophisticated computational tools come handy in managing the posterior distribution of interest. Sit back, relax, and take a tour of the standard algorithms which are synonymous to Bayesian Statistics.

Specific topics to be covered, but not limited to

How can the Bayesian concept be helpful in a set up with many parameters, and how can it be an analytical nightmare. The simple Monte-Carlo methodology, random walk Metropolis – Hastings (RWMH), Gibbs Sampling, Markov Chain Monte Carlo (MCMC) Algorithm, Approximate Bayesian Computation (ABC).

About the speaker

Nabendu Pal is a full Professor of Statistics in the Department of Mathematics, University of Louisiana (UL) at Lafayette, USA, where he has been in the faculty since August 1989. Prior to joining UL Lafayette, he received his bachelor and master degrees in 1984 and 1986, respectively from the Indian Statistical Institute, Kolkata (India), and Ph.D. degree from the University of Maryland Baltimore County (UMBC) in 1989. He also taught at the University of Arkansas, Fayetteville, USA, as a visiting faculty in Spring 1989. Prof. Pal is also an Adjunct Professor in the Faculty of Mathematics and Statistics, Ton Duc Thang University (TDTU), Ho Chi Minh City, Vietnam. His research interests include Statistical Inferences, Decision Theory, Bayesian Analysis, Biostatistics, Reliability and Life Testing, and Computational Statistics.

Registration link

To register for the web-workshop, please click the link
https://us02web.zoom.us/meeting/register/tZwsduqvqTkiEtaAhifDWmxQCdbzVhTbVxnu

How to join the workshop

Registration is compulsory for all without exception. Once you register, you would get a mail giving you the ID and passcode of ZOOM to join live in the workshop. The registration is simple, and it would not take more than a couple of minutes. You need to give your affiliation and your contact.

There is NO registration fee involved. However, all those participants, especially the research scholars, desirous of getting a **participation certificate**, may deposit online a sum of **Rs. 100** (Rupees one hundred only) towards registration. The details of the bank account are given below:

Payee's Account Name: Society of Statistics, Computer and Applications Savings Bank Account Number: 430010100000648
IFSC Code: UTIB0000430
Bank Address: C.R. Park, New Delhi

The SSCA expects to have many young and experienced researchers joining the workshop and taking advantage of this opportunity. Please do share this with your friends, colleagues and young researchers.

V.K. Gupta	**Shalini Chandra**	**Appavoo Dhandapani**
President, SSCA	**Organizing Secretary**	**Vice-President, SSCA**