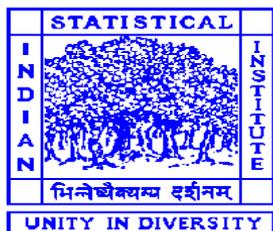


CHOWDHURY LECTURE SERIES

22 – 25 February 2021

SQC & OR Unit

Indian Statistical Institute, Bangalore



Organized by:

SQC & OR Unit, Indian Statistical Institute, Bangalore - 560 059, INDIA

Phone : +91-80-2698 5402

Mobile: +91 94487 04182

Fax : +91-80-2848 4910

Web : <http://www.isibang.ac.in>

e - mail : boby@isibang.ac.in & sqc_course@isibang.ac.in

Chowdhury Lecture Series

Title: **Penalized Likelihood based Variable Selection**

Speaker: **Asokan Mulayath Variyath**

Memorial University of Newfoundland, Canada

Date: 22 February 2021

Time: 7:00 PM to 8:00 PM IST

Abstract:

Regression analysis is one of the most important statistical techniques used in life sciences, engineering and agriculture. In the beginning of the analysis, researchers consider large number of independent variables (covariates) in the model building process. However, in practice, many of these covariates have no or very little influence on the response variable of interest. Identification of a simpler and more adequate model is of great interest. In this talk, I will briefly introduce the commonly used variable selection approaches such as AIC, BIC, step-wise regression approaches. A class of techniques used for variable selection is the penalized likelihood, where variable selection and estimation will be carried out simultaneously. These approaches can be easily implemented in generalized linear models. An approach using penalized likelihood extended to longitudinal data as well as multivariate multiple regression also will be discussed.

Chowdhury Lecture Series



Title: **Statistical Process Control in the Big Data Era**

Speaker: **Peihua Qiu**

University of Florida, Florida

Date: 23 February 2021

Time: 7:00 PM to 8:00 PM IST

Abstract:

"Big data" is a buzzword these days due to an enormous amount of data-rich applications in different industries and research projects. In practice, big data often take the form of data streams in the sense that new batches of data keep coming over time. One fundamental research problem for analyzing such big data streams in a given application is to sequentially monitor the underlying process behind the observed data to see whether it is longitudinally stable, or how its distribution changes over time. To monitor a sequential process, one major statistical tool is the statistical process control (SPC), which has been used mainly for monitoring production lines in manufacturing industries during the past several decades. With many new and versatile methods developed in recent SPC research, SPC can provide a powerful tool for handling many other applications. In this talk, I will introduce some recent SPC concepts and methods and discuss some challenges in the interface of the existing SPC methods and some big data applications as well.

Chowdhury Lecture Series

Title: Sequential Learning of Deformation Models in Additive Manufacturing

Speaker: Tirthankar Dasgupta
Rutgers University, New Jersey

Date: 24 February 2021

Time: 8:00 PM to 9:00 PM IST

Abstract:

Geometric fidelity of 3D printed products is critical for additive manufacturing to be a direct manufacturing technology. One of the strategies adopted to improve geometric quality in additive manufacturing is to control input product geometry based on the observed product deviation. This strategy involves changing the computer-aided design (CAD) design by optimally compensating for the product deviations. To accomplish this goal, it is important to build predictive models to forecast the quality of a wide class of product shapes, particularly considering the vast library of AM built products with complex geometry. In this talk, we will discuss some challenges involved in building such predictive models from limited experimental resources and some promising research directions.

Chowdhury Lecture Series



Title: **Some Research and Publishing Experience in Statistical Reliability and Quality Control**

Speaker: **Min Xie**
City University of Hong Kong, Hong Kong

Date: 25 February 2021

Time: 7:00 PM to 8:00 PM IST

Abstract:

Quality and reliability are of great importance to both manufacturers and customers in the competitive world. There are many research and application problems that have to be dealt with. In this talk, we will first summarize some research works related to quality, reliability, industrial engineering, applied statistics. Then how to publish the results after the research will be discussed, which could be of interest to graduate students and junior researchers.

Chowdhury Lecture Series

Registration Fee

There is no registration fee for this program. The admission is free

Seats are limited. The participants will be selected on the first-come-first-serve basis

Registration Form

<https://forms.gle/aCZoEg199um5KEkNA>

Important Dates

Start date: 22 February 2021

End date: 25 February 2021

Contact: Organizing Secretary: CLS-01,
SQC & OR Unit, Indian Statistical Institute,
8th Mile, Mysore Road, Bangalore –560059, INDIA

Fax: +91-80-2848 4910

Phone: + 91-80-2698 5402

Mobile: +91 94487 04182

email: boby@isibang.ac.in & sqc_course@isibang.ac.in

Indian Statistical Institute

1. Indian Statistical Institute is a unique institution devoted to the research, teaching and application of statistics, natural sciences and social sciences
2. It is declared by an Act of Parliament as an Institute of National Importance.
3. Over the years, the Institute has grown as a multi-disciplinary organization.
4. It functions as a University empowered to award degrees up to Ph.D.; as a Corporation in undertaking large scale projects; as a Firm of Consultants to industries to improve Quality, Reliability & Efficiency and as a Meeting place of Scientists, Economists & Literary figures from all parts of the world.

Role & Function of SQC & OR Division

1. The pioneer and leader in blending statistical theory with practice and institutionalizing the continuous improvement process into a sustainable system.
2. To strengthen the national economy through a continual search for excellence in Quality.
3. To disseminate the basic concepts and techniques for Quality Improvement by organizing Training programs, Workshops and In-house programs.
4. To develop highly skilled professionals capable of self-actualization.
5. To help industries in their efforts to cope up with the growing challenge of global competition through implementation of quality systems based on ISO-9000 series, ISO-14000, QS-9000 standards, Six Sigma & World Class Manufacturing.
6. To continually develop and improve methodologies through applied research efforts to attain International Standards in services provided.