

Foreword

The Indian Statistical Institute (ISI) was established on December 17, 1931 by a great visionary Prof. Prasanta Chandra Mahalanobis to promote research in the theory and applications of statistics as a new scientific discipline in India. In 1959, Pandit Jawaharlal Nehru, the then Prime Minister of India introduced the ISI Act in the parliament and designated it as an Institution of National Importance because of its remarkable achievements in statistical work as well as its contribution to economic planning.

Today, the Indian Statistical Institute occupies a prestigious position in the academic firmament. It has been a haven for bright and talented academics working in a number of disciplines. Its research faculty has done India proud in the arenas of Statistics, Mathematics, Economics, Computer Science, among others. Over seventy five years, it has grown into a massive banyan tree, like the institute emblem. The Institute now serves the nation as a unified and monolithic organization from different places, namely Kolkata, the Head Quarters, Delhi, Bangalore and Chennai, three centers, a network of five SQC-OR Units located at Mumbai, Pune, Baroda, Hyderabad and Coimbatore, and a branch (field station) at Giridih.

The platinum jubilee celebrations of ISI have been launched by Honorable Prime Minister Prof. Manmohan Singh on December 24, 2006, and the Govt. of India has declared June 29 as the “Statistics Day” to commemorate the birthday of Prof. Mahalanobis nationally.

Prof. Mahalanobis, was a great believer in interdisciplinary research, because he thought that this will promote the development of not only Statistics, but also the other natural and social sciences. To promote interdisciplinary research, major strides were made in the areas of computer science, statistical quality control, economics, biological and social sciences, physical and earth sciences.

The Institute's motto of 'unity in diversity' has been the guiding principle of all its activities since its inception. It highlights the unifying role of statistics in relation to various scientific activities.

In tune with this hallowed tradition, a comprehensive academic programme, involving Nobel Laureates, Fellows of the Royal Society, Abel prize winner and other dignitaries, has been implemented throughout the Platinum Jubilee year, highlighting the emerging areas of ongoing front line research in its various scientific divisions, centers, and outlying units. It includes international and national-level seminars, symposia, conferences and workshops, as well as series of special lectures. As an outcome of these events, the Institute is bringing out a series of comprehensive volumes in different subjects under the title Statistical Science and Interdisciplinary Research, published by the World Scientific Publishing Co., Singapore.

The present volume titled "Modeling, Computation and Optimization" is the sixth one in the series. The volume consists of twenty chapters, written by some pioneers of the field as well as younger researchers from different parts of the world, and it is unique in bringing topics like modeling, computation and optimization together. The chapters demonstrate different emerging research trends in theory, computation and applications of mathematical modeling to problems in statistics, economics, optimization and game theory. Articles focusing on thrust areas like model for wireless networks, model of Nash networks, reliability models in economics, support vector machines, complementarity modeling and games, and addressing the challenging issues related to interface of modeling and computation are included. I believe the state-of-the art studies presented in this book will be very useful to both researchers and practitioners.

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Sankar K. Pal
Series Editor and
Director