

Foreword

The Indian Statistical Institute (ISI) was established on 17th December, 1931 by a great visionary Professor 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 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 heaven 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 Quarter, Delhi and Bangalore, two centers, a network of six SQC-OR Units located at Mumbai, Pune, Baroda, Hyderabad, Chennai and Coimbatore, and a branch (field station) at Giridih.

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

Professor 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, and other dignitaries, has been implemented throughout the Platinum Jubilee year, highlighting the emerging areas of ongoing frontline research in its various scientific divisions, centres, 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 World Scientific Publishing, Singapore.

The present volume titled *Advances in Intelligent Information Processing: Tools and Applications* is the second one in the series. It has thirteen chapters, written by eminent scientists from different parts of the world, dealing with different aspects, characteristics and methodologies of intelligent information processing with real life applications. Both classical and modern techniques are used. Chapters on image and video processing mainly deal with challenging problems like curve evolution for partially occluded patterns, contour tracking, region classification, object category identification in video sequence, facial expression recognition, duplicate image detection for efficient video retrieval, and hardware architecture for pixel classification. Besides, the issues of uncertainty handling in class definition by integrating fuzzy sets and rough sets with an application on bioinformatics data, and the reuse of domain knowledge in soft computing framework for efficient modeling of intelligent systems are described in two chapters. I believe the state-of-the-art studies presented in this book will be very useful to readers.

Thanks to the contributors for their excellent research contributions and to volume editors Professors Bhabatosh Chanda and C.A. Murthy for their sincere effort in bringing out the volume nicely in time. Thanks are also due to World Scientific for their initiative in publishing the series and being a part of the Platinum Jubilee endeavor of the Institute.

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