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Special Issue on

**Advancements in Mathematics and Optimization
Techniques in Technology & Business**

Guest Editors

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FOREWORD

Advancements in Mathematics and Optimization Techniques in Technology and Business are integral components of numerous scientific and practical domains, providing valuable tools for understanding complex phenomena, making informed decisions, and predicting outcomes. Over the years, these disciplines have witnessed significant advancements, driven by the relentless pursuit of improved methodologies, the availability of vast amount of data, and the need to address increasingly intricate real-world problems. One of the key areas of focus in this special issue is the development of mathematical modeling techniques for complex systems which are characterized by their intricate interconnectedness, making them challenging to study and analyze. Researchers have made significant strides in developing sophisticated mathematical models and computational methods to simulate and understand such systems. Network modeling, agent-based modeling, stochastic modeling, and dynamical systems are among the areas that have seen remarkable progress, enabling researchers to gain deeper insights into the behavior and dynamics of complex systems.

The purpose of this special issue is to showcase the latest advancements in mathematical modelling and statistical analysis, for highlighting the cutting-edge research, innovative techniques, and practical applications that have emerged in recent years to optimize Technology usage and get maximum business output. By bringing together contributions from researchers, academics, and practitioners, this special issue aims to foster interdisciplinary collaborations, disseminate knowledge, and push the boundaries of these fields further.

Another crucial aspect covered in this special issue is the advancement of statistical analysis methods, particularly in the context of big data. The era of big data has presented both opportunities and challenges for

statistical analysis. With the massive influx of data from diverse sources, there is an increasing need for advanced statistical techniques that can extract meaningful information and patterns from large and complex datasets. Machine learning, data mining, Bayesian inference, and multivariate analysis are some of the methods that have been extensively applied and refined to cope with the challenges

With the efforts of editors, the special issue received more than 300 papers, which went through peer review process and following the same only 25 papers have been selected for publication in this issue.

The guest editors would like to express their gratitude to authors for sharing their valuable research and publication partner for their approval regarding the special issue of the esteemed journal. Guest editors especially thank Prof. B. K. Dass, Chief Editor, who supported us in bringing out this special issue on “Advancements in Mathematics and Optimization Techniques in Technology and Business” of selected peer reviewed, high quality papers, specifically in, *Journal of Information and Optimization Sciences*, published by TARU PUBLICATIONS, New Delhi.

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