

# **Journal of Information & Optimization Sciences**

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*Special Issue on*

**Recent Advances in Information Sciences, Optimization,  
and Intelligent Computational Methods**

*Guest Editors*

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## FOREWORD

It gives us immense pleasure to present this special issue entitled “Recent Advances in Information Sciences, Optimization, and Intelligent Computational Methods”. This issue brings together a diverse collection of research contributions in the fields of Computer Science, Artificial Intelligence, Machine Learning, Cybersecurity, and Applied Mathematics. The special issue reflects the growing importance of interdisciplinary research in addressing emerging technological challenges and developing innovative solutions for the modern digital era.

The International Conference on Applied and Interdisciplinary Mathematical Sciences (ICAIM-2025) was held from 20–22 November 2025 and organized by The A. H. Siddiqi Centre for Advanced Research in Applied Mathematics & Physics (CARAMP), Sharda University, Greater Noida, India. A total of 280 research papers were received for consideration, out of which 15 papers were selected for inclusion in this special issue following a rigorous review and selection process. The selected contributions reflect the quality, diversity, and interdisciplinary nature of the research presented at ICAIM-2025 and highlight the application of mathematical and computational approaches to contemporary scientific and technological challenges.

The rapid advancement of artificial intelligence and computational technologies has opened new avenues for research, innovation, and societal development. The papers included in this issue explore several contemporary and significant areas, including multilingual transformer models, information-theoretic approaches, machine learning in audio processing, transfer learning for medical image classification, and optimization techniques for complex computational problems.

A notable feature of this volume is its emphasis on the integration of mathematical foundations with technological applications. Research on entropy evolution in multilingual transformer models and mathematical approaches to transfer learning demonstrates the role of theoretical understanding in advancing intelligent systems. Similarly, the application

of genetic algorithms and hybrid optimization techniques to the traveling salesman problem highlights the significance of computational intelligence in solving complex optimization problems.

The collection of papers also addresses important and emerging concerns in cybersecurity and digital technology. Contributions on IoT and smart devices, digital evidence collection, mobile traffic management, deepfake detection, and the security of quantum networks demonstrate the need for robust, reliable, and innovative approaches to protecting digital infrastructure. The research on detecting fake and cloned websites further emphasizes the importance of developing intelligent systems capable of identifying and responding to evolving cyber threats.

These scholarly contributions represent the efforts of researchers from diverse institutions and geographical regions. Their work reflects the collaborative spirit of academic research and the commitment to advancing knowledge through rigorous investigation, technological innovation, and practical applications.

We are confident that this volume will be a valuable addition to the literature for researchers, academicians, students, and professionals seeking to explore recent developments in computer science, artificial intelligence, cybersecurity, and related disciplines. It is hoped that the research presented herein will inspire further investigations, foster interdisciplinary collaboration, and contribute to the development of innovative solutions for the challenges of the future.

We extend our sincere appreciation to all authors for their valuable contributions, to the reviewers for their insightful comments and dedicated efforts, and to the editorial team for their continuous support in bringing out this special issue. We are particularly thankful to Professor B. K. Dass, Chief Editor, for his constant support and encouragement during the publication process in the *Journal of Information and Optimization Sciences*, published by Taru Publications, New Delhi.

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