Kousik Dasgupta
Somnath Mukhopadhyay
Jyotsna K. Mandal
Paramartha Dutta (Eds.)

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Computational Intelligence in Communications and Business Analytics

5th International Conference, CICBA 2023
Kalyani, India, January 27–28, 2023
Revised Selected Papers, Part II

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Editors
Kousik Dasgupta
Kalyani Government Engineering College
Kalyani, India

Somnath Mukhopadhyay
Assam University
Silchar, India

Jyotsna K. Mandal
University of Kalyani
Kalyani, West Bengal, India

Paramartha Dutta
Visvabharati University
Santiniketan, West Bengal, India

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Preface

It is with immense pleasure that we present the proceedings of the Fifth International Conference on Computational Intelligence in Communications and Business Analytics (CICBA 2023), organized by the Department of Computer Science & Engineering at Kalyani Government Engineering College, Kalyani, during January 27–28, 2023. CICBA has evolved into a flagship event at the intersection of computational intelligence, communications, and business analytics, fostering international collaboration and the dissemination of cutting-edge research.

CICBA 2023 welcomed distinguished keynote speakers, each a luminary in their field. We were honoured to have with us Bhabatosh Chanda from the Indian Statistical Institute, Kolkata, Amit Konar from Jadavpur University, Kalyanmoy Deb from Michigan State University, Hisao Ishibuchi from the Southern University of Science and Technology, China, Jayant Haritsa from IISc Bangalore, Narayan C. Debnath from Eastern International University, Vietnam, Celia Shahnaz from Bangladesh University of Engineering and Technology, Hiroyuki Sato from The University of Electro-Communications, Japan, Debashis De from Maulana Abul Kalam Azad University of Technology, West Bengal, India, and Mohd Helmy Bin Abd Wahab from University Tun Hussein Onn Malaysia, Malaysia.

In technical collaboration with IEEE CIS Kolkata, IEEE Kolkata Section, and IETE Kolkata, CICBA 2023 garnered substantial interest from the global research community. Springer CCIS Series was our esteemed publication partner, ensuring the high quality and widespread dissemination of the conference proceedings.

We are pleased to present the submission statistics for CICBA 2023. We received 187 initial submissions, which is evidence of our conference's growing significance. 52 papers were approved and registered, representing an impressive acceptance rate of 27%.

The conference proceedings are organized into two volumes, each featuring distinct tracks. In Volume 1, you will find 26 insightful papers in the "Computational Intelligence" track. Volume 2 is divided into two tracks: "Theories and Applications to Data Communications" with 17 papers, and "Theories and Applications to Data Analytics" with 9 papers. These contributions represent the cutting edge of research in computational intelligence and business analytics and cover a wide range of topics.

As we reflect on the history of CICBA since its inception in 2017, we are pleased with its growth and impact. This conference series has consistently attracted high-quality research from around the world. We are grateful for the contributions of our esteemed keynote speakers, organizing committees, and evaluators, who have made CICBA a remarkable venue for the exchange of knowledge.

We sincerely thank all the authors who submitted their work, the reviewers who diligently evaluated the submissions, and the participants who contributed to vibrant discussions during the conference. Your collective efforts have enriched the academic discourse in computational intelligence, communications, and business analytics.

We hope you find these proceedings enlightening and inspiring, and that they serve as a valuable resource for researchers and practitioners in the field. We look forward to future editions of CICBA, which we are committed to making even more intellectually stimulating and professionally rewarding.

Sincerely,

Kousik Dasgupta
Somnath Mukhopadhyay
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Chaotic Quasi-Oppositional Moth Flame Optimization for Solving Multi-objective Optimal DG Emplacement Problem in Radial Distribution Network

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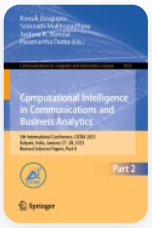

Computational Intelligence in Communications and Business Analytics

(CICBA 2023)

Sneha Sultana, Sourav Paul, Anupriya Singh, Ankita Kumari & Provas Kumar Roy

Part of the book series: Communications in Computer and Information Science ((CCIS,volume 1956))

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Abstract

Many scientists are still concerned about power quality and minimising system losses. By lowering distribution losses, distributed generation (DG) increases overall electricity efficiency and quality. The approach used in this work employs chaotic quasi-oppositional moth flame optimisation (CQOMFO) to determine the appropriate scale of DG in the radial distribution system, hence minimising losses, lowering voltage deviance, and improving the voltage stability index. The aforementioned technique is put to the test on three separate test systems, which include buses of 33, 69, and 118. The multi-objective function has been significantly fine-tuned in order to gain a thorough technical understanding of the CQOMFO algorithm. The results of the computer simulations produced with the assistance of the scheduled approach are contrasted with the earlier optimisation methods put forth by several authors.

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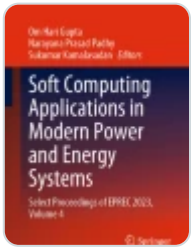

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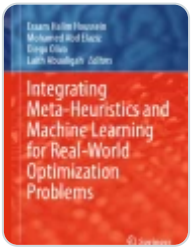

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Author information

Authors and Affiliations

Dr. B. C. Roy Engineering College, Durgapur, India
Sneha Sultana, Sourav Paul, Anupriya Singh & Ankita Kumari

Kalyani Government Engineering College, Kalyani, India
Provas Kumar Roy

Corresponding author

Correspondence to Sneha Sultana .

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