Algorithms for Intelligent Systems

This book series publishes research on the analysis and development of algorithms for intelligent systems with their applications to various real world problems. It covers research related to autonomous agents, multi-agent systems, behavioral modeling, reinforcement learning, game theory, mechanism design, machine learning, meta-heuristic search, optimization, planning and scheduling, artificial neural networks, evolutionary computation, swarm intelligence and other algorithms for intelligent systems. The book series includes recent advancements, modification and applications of the artificial neural networks, evolutionary computation, swarm intelligence, artificial immune systems, fuzzy system, autonomous and multi agent systems, machine learning and other intelligent systems related areas. The material will be beneficial for the graduate students, post-graduate students as well as the researchers who want a broader view of advances in algorithms for intelligent systems. The contents will also be useful to the researchers from other fields who have no knowledge of the power of intelligent systems, e.g. the researchers in the field of bioinformatics, biochemists, mechanical and chemical engineers, economists, musicians and medical practitioners. The series publishes monographs, edited volumes, advanced textbooks and selected proceedings.

More information about this series at http://www.springer.com/series/16171

Mohammad Shorif Uddin ·
Jagdish Chand Bansal
Editors

Proceedings of International Joint Conference on Computational Intelligence

IJCCI 2018

Springer

Editors
Mohammad Shorif Uddin
Department of Computer Science
and Engineering
Jahangirnagar University
Dhaka, Bangladesh

Jagdish Chand Bansal
Department of Mathematics
South Asian University
New Delhi, Delhi, India

ISSN 2524-7565 ISSN 2524-7573 (electronic)
Algorithms for Intelligent Systems
ISBN 978-981-13-7563-7 ISBN 978-981-13-7564-4 (eBook)
https://doi.org/10.1007/978-981-13-7564-4

This Springer imprint is published by the registered company Springer Nature Singapore Pte Ltd.
The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

Preface

This book contains high-quality research papers as the proceedings of the International Joint Conference on Computational Intelligence (IJCCI 2018). IJCCI 2018 has been jointly organized by Daffodil International University (DIU), Bangladesh; Jahangirnagar University (JU), Bangladesh; and South Asian University (SAU), India. It was held on 14–15 December 2018 at DIU, Dhaka, Bangladesh. The conference was conceived as a platform for disseminating and exchanging ideas, concepts and results of the researchers from academia and industry to develop a comprehensive understanding of the challenges of the advancements of intelligence in computational viewpoints. This book will help in strengthening a congenial and nice networking between academia and industry. The conference focused on collective intelligence, soft computing, optimization, cloud computing, machine learning, intelligent software, robotics, data science, data security, big data analytics, signal and natural language processing. This conference is a biennial update of the first conference named International Workshop on Computational Intelligence (IWCI 2016) that was held on 12–13 December 2016 at Jahangirnagar University, Dhaka, Bangladesh, in collaboration with South Asian University (SAU), India, under the technical co-sponsorship of IEEE Bangladesh Section. All accepted and presented papers of IWCI 2016 are in IEEE Xplore Digital Library. We have tried our best to enrich the quality of IJCCI 2018 through a stringent and careful peer review process. IJCCI 2018 received 182 papers from 496 authors (459 are local authors and 37 are foreign authors from 9 countries), and 63 papers were finally accepted for presentation. However, the proceedings contain 61 papers.

In fact, this book presents the novel contributions in areas of computational intelligence and it serves as a reference material for advanced research.

Dhaka, Bangladesh — Mohammad Shorif Uddin
New Delhi, India — Jagdish Chand Bansal

Contents

About the Editors

Dr. Mohammad Shorif Uddin is a Professor at Jahangirnagar University, Bangladesh. He completed his Master of Technology Education at Shiga University, Japan in 1999, his Doctor of Engineering in Information Science at Kyoto Institute of Technology, Japan, in 2002, and an MBA at Jahangirnagar University in 2013. He is the Editor-in-Chief of ULAB Journal of Science and Engineering, an Associate Editor of IEEE Access, and has served as General Chair or Co-Chair of various conferences, including the IJCCI 2018, EICT 2017 and IWCI 2016. He holds two patents for his scientific inventions, is a senior member of several academic associations, and has published extensively in international journals and conference proceedings.

Dr. Jagdish Chand Bansal is an Assistant Professor at South Asian University, New Delhi, India and a Visiting Research Fellow at Liverpool Hope University, UK. A leading researcher in the field of swarm intelligence, he has published numerous research papers in respected national and international journals.