Healthcare Staff Scheduling: Emerging Fuzzy Optimization Approaches

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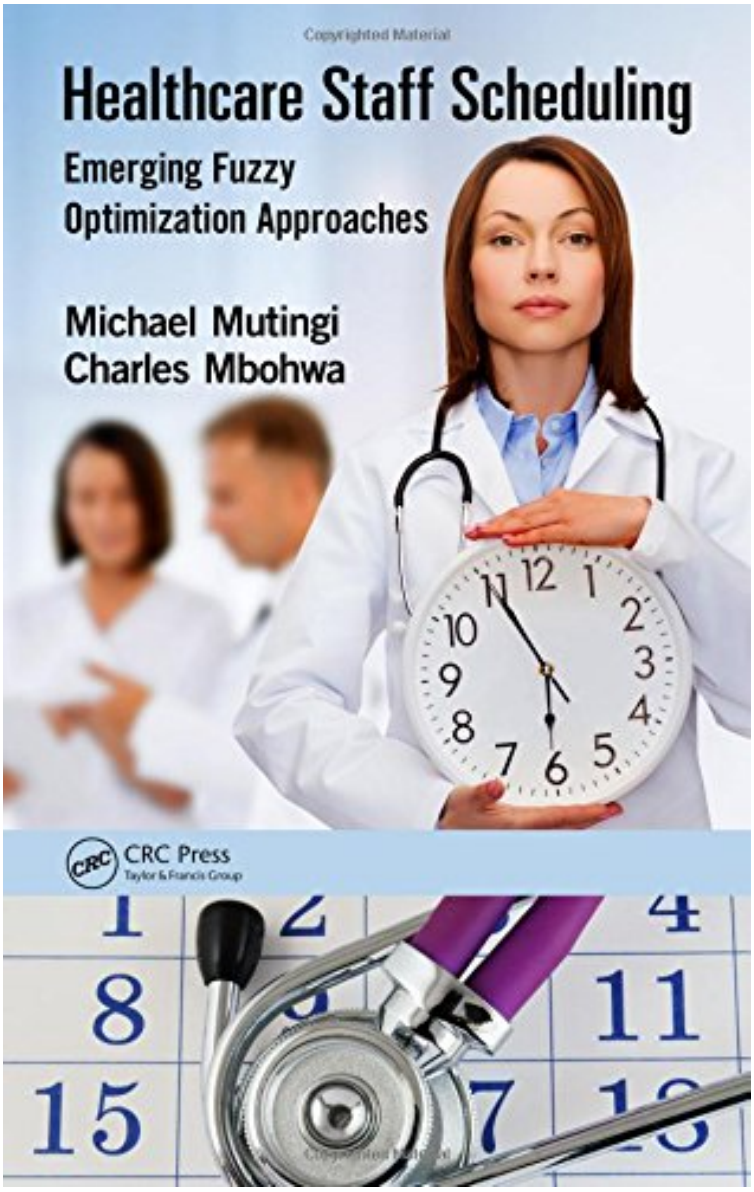

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Michael Mutingi, Charles Mbohwa : Healthcare Staff Scheduling: Emerging Fuzzy Optimization Approaches before purchasing it in order to gage whether or not it would be worth my time, and all praised Healthcare Staff

Scheduling: Emerging Fuzzy Optimization Approaches:

Healthcare operations, in hospitals and home healthcare settings, are inundated with complex fuzzy features that impose difficulties in the creation of work schedules. As healthcare workers call for schedules that accommodate their individual preferences and patients continue to call for more personalized healthcare, further research into multi-criteria solution approaches to staff scheduling is imperative.Healthcare Staff Scheduling: Emerging Fuzzy Optimization Approaches presents in-depth research into emerging approaches to healthcare staff scheduling. It starts by reviewing the key issues and challenges inherent in staff scheduling, along with the basic concepts of fuzzy set theory. Examining research applications in healthcare staff scheduling, it details promising fuzzy optimization algorithms derived from biologically inspired approaches and fuzzy theory.Providing researchers, operations analysts, scientists, and practitioners with a practical and in-depth understanding of modern fuzzy metaheuristic optimization approaches, the book presents cutting-edge research on multi-criteria algorithms and their applications in healthcare operations, particularly in staff scheduling.The book illustrates flexible techniques for solving complex scheduling problems that account for the variability that results from imprecise human preferences. Covering recent developments in the methods utilized to create high-quality staff schedules, it includes many instructive examples of healthcare schedule problems along with potential solutions.Considering avenues for future research, this book will help readers pave the way to new and improved methods for solving staff scheduling problems that are difficult to evaluate quantitatively due to imprecision, fuzziness, and vagueness.To promote the quality of the work presented, all chapters in this book have been rigorously reviewed by leading international experts and researchers.

"This book has applied emerging optimization approaches, such as the simulated metamorphosis algorithm and the fuzzy grouping genetic algorithm, for solving homecare personnel scheduling problems which are very complex. The book will be an asset to the homecare sector for solving their scheduling problems."Professor Godfrey Onwubolu, Sheridan Institute of Technology Advanced Learning, Brampton, Canada"The book provides a definitive guide on fuzzy metaheuristic approaches, which is a welcome development for researchers in the area. Biologically inspired metaheuristics have been proven to offer some of the best solution methods to solving hard combinatorial problems. This book extends the utility of the approaches by combining them with fuzzy theory concepts, which allows them to more efficiently handle problems characterized by imprecision, fuzziness and vagueness."Dr Herbert Mapfaira, University of BotswanaAbout the AuthorMichael Mutingi is a lecturer in industrial engineering in the Faculty of Engineering and Technology at the University of Botswana. He has professional experience as a research associate at the National University of Singapore and as a lecturer in industrial engineering at the National University of Science Technology, Zimbabwe. He is completing his PhD in engineering management at the University of Johannesburg, South Africa, majoring in healthcare operations management. Mutingi obtained his MEng and BEng in industrial engineering from the National University of Science Technology, Zimbabwe. He researches healthcare operations management, supply chain management, manufacturing systems, biologically inspired metaheuristic optimization, and operations research applications. Michael Mutingi is a member of the Southern African Institution of Industrial Engineers and the System Dynamics Society. He has published in international journals, such as Computers Industrial Engineering, Production Planning Control, Journal of Intelligent Manufacturing, International Journal of Production Research, and Maintenance Reliability. Charles Mbohwa is a professor of operations management at the University of Johannesburg, South Africa. Previously he was a senior lecturer in Mechanical Engineering at the University of Zimbabwe and a mechanical engineer at the National Railways of Zimbabwe. He has a doctor of engineering from the Tokyo Metropolitan Institute of Technology, an MSc in operations management and manufacturing systems from the University of Nottingham, UK, and a BSc with honors in mechanical engineering from the University of Zimbabwe. He has been a British Council Scholar, a Japan Foundation Fellow, a Heiwa Nakajima Fellow, a Kubota Foundation Fellow, and a Fulbright Fellow. His research interests are in operations management, engineering management, supply chain management, manufacturing systems, energy systems, and sustainability assessment. He has published one book, several book chapters, and more than 120 academic papers.