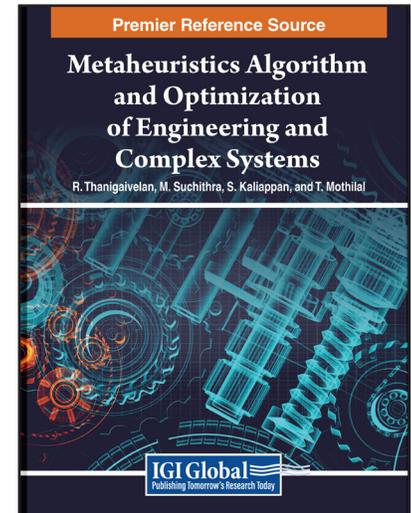


Metaheuristics Algorithm and Optimization of Engineering and Complex Systems

Part of the Advances in Systems Analysis, Software Engineering, and High Performance Computing Book Series

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Description:

In the field of engineering, optimization and decision-making have become pivotal concerns. The ever-increasing demand for data processing has given rise to issues such as extended processing times and escalated memory utilization, posing formidable obstacles across various engineering domains. Problems persist, requiring not only solutions but advancements beyond existing best practices. Creating and implementing novel heuristic algorithms is a time-intensive process, yet the imperative to do so remains strong, driven by the potential to significantly lower computational costs even with marginal improvements. This book, titled **Metaheuristics Algorithm and Optimization of Engineering and Complex Systems**, is a beacon of innovation in this context. It examines the critical need for inventive algorithmic solutions, exploring hyperheuristic approaches that offer solutions such as automating search spaces through integrated heuristics.

Metaheuristics Algorithm and Optimization of Engineering and Complex Systems provides an exhaustive overview of modern computational methods within emerging fields. It goes beyond the mere description of general metaheuristic methods, incorporating state-of-the-art articles from classical application areas. Tailored to serve as a textbook for graduate-level courses, a reference guide for engineering and social science enthusiasts, or a compilation of fresh opportunities for scholars, this book spans the spectrum of current developments in hyper-heuristic approaches. Covering simulated annealing, scatter search, tabu search, constraint programming, and more, it acts as a bridge between conventional algorithms and cutting-edge meta-heuristic algorithms. The book positions itself as a pivotal resource for dynamic optimization practitioners, appealing to both novices and seasoned professionals seeking a single point of contact for the latest insights in this ever-evolving field.

Designed to cater to a broad audience, this book is a valuable resource for both novice and experienced dynamic optimization practitioners. By addressing the spectrum of theory and practice, as well as discrete versus continuous dynamic optimization, it becomes an indispensable reference in a captivating and emerging field. With a deliberate focus on inclusivity, the book is poised to benefit anyone with an interest in staying abreast of the latest developments in dynamic optimization.

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