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Everything About Metaheuristic Optimization

Algorithms Inspired by Nature

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Everything About Metaheuristic Optimization provides a comprehensive overview and structured analysis of contemporary metaheuristic algorithms inspired by natural phenomena. Real-world optimization problems are often complex, involving nonlinearity and intricate constraints that cause traditional mathematical methods to fail. This book explores how nature-inspired algorithms overcome these hurdles by balancing exploration and exploitation to efficiently navigate large solution spaces.

Designed for researchers, data scientists, and engineers, this monograph connects the biological, physical, and human-behavioral inspirations of over 50 algorithms to their practical mathematical formulations. From swarm intelligence to artifact-inspired models, readers will gain a deep understanding of how to apply these powerful stochastic techniques to solve complex optimization challenges across scientific and industrial domains.

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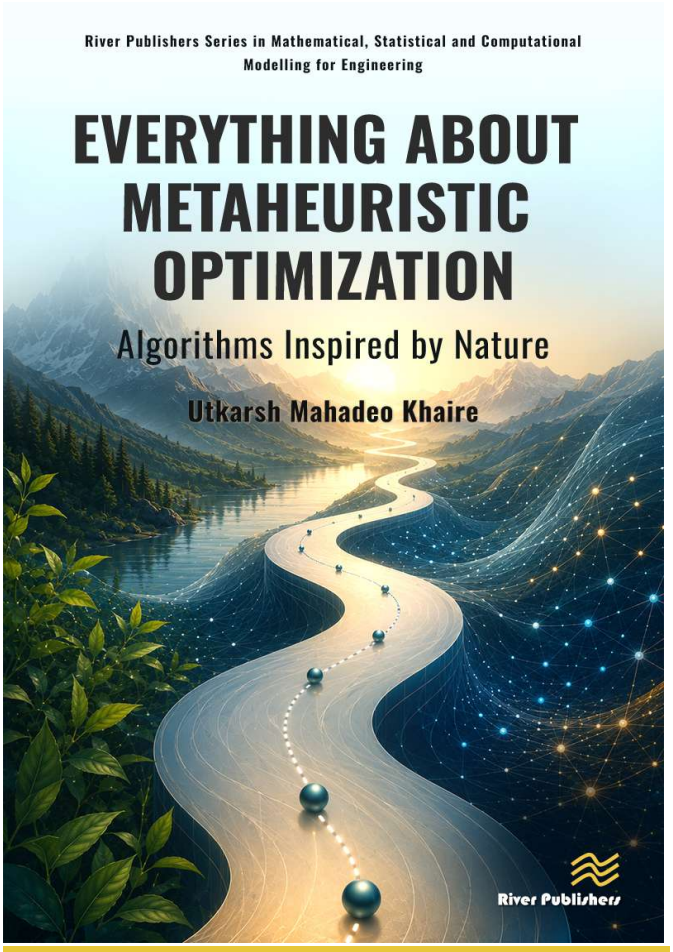

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