## Metaheuristic and Machine Learning Optimization Strategies for Complex Systems

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

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## **Description:**

In contemporary engineering domains, optimization and decision-making issues are crucial. Given the vast amounts of available data, processing times and memory usage can be substantial. Developing and implementing novel heuristic algorithms is time-consuming, yet even minor improvements in solutions can significantly reduce computational costs. In such scenarios, the creation of heuristics and metaheuristic algorithms has proven advantageous. The convergence of machine learning and metaheuristic algorithms offers a promising approach to address these challenges.

Metaheuristic and Machine Learning Optimization Strategies for Complex Systems covers all areas of comprehensive information about hyper-heuristic models, hybrid meta-heuristic models, nature-inspired computing models, and meta-heuristic models. The key contribution of this book is the construction of a hyper-heuristic approach for any general problem domain from a meta-heuristic algorithm. Covering topics such as cloud computing, internet of things, and performance evaluation, this book is an essential resource for researchers, postgraduate students, educators, data scientists, machine learning engineers, software developers and engineers, policy makers, and more.

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## **Topics Covered:**

Cloud Computing; Complex Systems Computer Communications Distribution System Reconfiguration Genetic Algorithm Optimization Hybrid Renewable Energy Systems Internet of Things (IoT) Machine Learning Metaheuristic Algorithms Performance Evaluation Sensor-Based Health Monitoring

Subject: Scientific, Technical, & Medical (STM) Readership Level: Advanced-Academic Level (Research Recommended) **Classification:** Edited Reference **Research Suitable For:** Advanced Undergraduate Students; Graduate Students; Researchers; Academicians; Professionals; Practitioners

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