Record Nr. UNINA9910682599103321 Metaheuristics for Machine Learning: New Advances and Tools // **Titolo** Mansour Eddaly, Bassem Jarboui, and Patrick Siarry, editors Pubbl/distr/stampa Singapore: ,: Springer Nature Singapore Pte Ltd., , [2023] ©2023 981-19-3888-1 **ISBN** Edizione [First edition.] Descrizione fisica 1 online resource (231 pages) Collana Computational Intelligence Methods and Applications Series Disciplina 006.31 Soggetti Machine learning Metaheuristics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references. 1. From metaheuristics to automatic programming -- 2. Biclustering Nota di contenuto Algorithms Based on Metaheuristics: A Review -- 3. A Metaheuristic Perspective on Learning Classifier Systems -- 4. An evolutionary clustering approach using metaheuristics and unsupervised machine learning algorithms for customer segmentation -- 5. Applications of Metaheuristics in Parameter Optimization in Manufacturing Processes and Machine Health Monitoring -- 6. Evolving Machine Learning-based classifiers by metaheuristic approaches for underwater sonar target detection and recognition -- 7. Solving the Quadratic Knapsack Problem using a GRASP algorithm based on a multi-swap local search -- 8. Algorithmic vs Processing Manipulations to Scale Genetic Programming to Big Data Mining -- 9. Dynamic assignment problem of parking slots. Sommario/riassunto Using metaheuristics to enhance machine learning techniques has become trendy and has achieved major successes in both supervised (classification and regression) and unsupervised (clustering and rule mining) problems. Furthermore, automatically generating programs via metaheuristics, as a form of evolutionary computation and swarm intelligence, has now gained widespread popularity. This book investigates different ways of integrating metaheuristics into machine learning techniques, from both theoretical and practical standpoints. It

explores how metaheuristics can be adapted in order to enhance machine learning tools and presents an overview of the main metaheuristic programming methods. Moreover, real-world applications are provided for illustration, e.g., in clustering, big data, machine health monitoring, underwater sonar targets, and banking.