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Nota di contenuto	Application of Machine Learning to Increase the Efficiency of the Global Search Algorithm for Solving Multicriterial Problems -- Sequential Decision Modeling for Dynamic Pricing and Revenue Management in Hotels -- Resource Allocation via Bayesian Optimization: An Efficient Alternative to Semi-Bandit Feedback -- Multi-Objective and Multiple Information Source Optimization for Fair & Green Machine Learning -- Extended Optimal Control Problem for Practical Application -- Explainable Process Deviance Discovery with Data-Efficient Deep Learning -- Line Search Stochastic Gradient Algorithm with a-Priori

Rule for Monitoring the Control of the Variance -- A Machine Learning Approach to Speed up the Solution of the Distributor's Pallet Loading Problem -- Combined First- and Second-Order Directions for Deep Neural Networks Training -- Constrained Global Optimization by Smoothing -- The Unreasonable Effectiveness of Optimal Transport Distance in the Design of Multi-Objective Evolutionary Optimization Algorithms -- An Improved Modified Jaya Optimization Algorithm: Application to the Solution of Nonlinear Equation Systems -- GPU Acceleration of the Enhanced Jaya Optimization Algorithm for Solving Large Systems of Nonlinear Equations -- Effective Resistance Based Community Detection in Complex Networks -- A Comparison of Formulations for Aircraft Deconfliction -- Optimal Recombination Problem in Genetic Programming for Boolean Functions -- Heuristics with Local Improvements for Two-Processor Scheduling Problem with Energy Constraint and Parallelization -- Numerical Analysis of Optimal Control of Assets and Liabilities by a Bank -- Optimal Control for Stochastic Multi-Agent Systems with the Use of Parallel Hybrid Genetic Algorithm -- DC Optimization in Adversarial Support Vector Machine -- A First-Order Optimality Condition in Nonsmooth Generalized Semi-Infinite Programming (GSIP) -- Miniaturisation of Binary Classifiers through Sparse Neural Networks -- Price Forecasting for Bitcoin: Linear Regression and SVM Approaches -- Inside the Box: 0-1 Linear Programming under Interval Uncertainty -- Machine Learning Techniques for Branch-and-Cut Methods: The Selection of Cutting Planes -- The Critical Cone and Second-Order Optimality Conditions for a State-Constrained Optimal Control Problem -- Local Information in Global Optimization with Dimensionality Reduction Schemes -- A Heuristic Solution Approach for Bulk Port Routing Optimization -- A Genetic Algorithm to Optimize the Dispatch of Firefighting Resources -- Robust Non-Convex Model-Based Approach for Deep Learning-Based Image Processing -- A DCA-Like Based Algorithm for the Merkle Tree Construction Problem in Ethereum Cryptocurrency System -- Numerical Optimization in Hyperbolic Space - Applications to Drug-Target Interaction Prediction -- Improving Feasibility of Optimal Control via Obtaining High-precision Model -- Dimensionality Reduction for Quadratic Convex Maximization -- Population Local Search for Single Processor Energy Efficient Scheduling Problem.

Sommario/riassunto

The three-volume set LNCS 14476-14478 constitutes the post conference proceedings of the 4th International Conference on Numerical Computations: Theory and Algorithms, NUMTA 2023, held in Pizzo Calabro, Italy, during June 14–20, 2023. The 45 full papers presented in this book together with 60 short papers were carefully reviewed and selected from 170 submissions. The papers focus on topics such as: continuous and discrete single- and multi-objective problems, local, global and large-scale optimization, classification in machine learning, optimal control, and applications; computational and applied mathematics (such as approximation theory, computational geometry, computational fluid dynamics, dynamical systems and differential equations, numerical algebra, etc.) and applications in engineering and science; numerical models, methods and software using traditional and emerging high-performance computational tools and paradigms (including the infinity and quantum computing) and their application in artificial intelligence and data science, bioinformatics, economics and management, engineering and technology, mathematical education, number theory and foundations of mathematics, etc.