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Nota di contenuto	-- Evolutionary machine learning. -- Social Interpretable Reinforcement Learning. -- Into the Black Box: Mining Variable Importance with XAI. -- Evolving RNNs for Stock Forecasting: A Low Parameter Efficient Alternative to Transformers. -- Generate more than one child in your co-evolutionary semi-supervised learning GAN. -- EDCA – An Evolutionary Data-Centric AutoML Framework for Efficient Pipelines. -- 30 years of particle swarm optimisation. -- Proposal of Efficient Particle Swarm Optimization for Constrained Optimization Problems. -- A Survey of Modern Hybrid Particle Swarm Optimization

Algorithms. -- An Investigation of Structural Bias in Particle Swarm Optimization. -- GPSO in PTO. -- We are Sending you Back... to the Optimum! Fuzzy Time Travel Particle Swarm Optimization. -- Memetic Variations of Overlapping Swarm Intelligence. -- Analysis of Evolutionary Computation Methods: Theory, Empirics, and Real-World Applications. -- Multi-Tree Genetic Programming for Large-scale Dynamic Tugboat Scheduling. -- Bio-inspired Algorithms for Green Computing and Sustainable Complex Systems. -- Hybridization of techniques based on Genetic Algorithms and Neural Networks to determine the water requirements of fig trees. -- Evaluating the Impact of Hysteretic Phenomena and Implementation Choices on Energy Consumption in Evolutionary Algorithms. -- Measuring energy consumption of BBOB fitness functions. -- Computational Intelligence for Sustainability. -- A PSO-based MPPT with Dynamic Monitoring Reset for PV Systems. -- An innovative approach for managing the water requirements of fig trees using artificial intelligence. -- GPBus: Genetic Programming based Automated Machine Learning for Bus Delay Prediction. -- Improving Fairness in Allocation of Emergency Medical Services using Multi-Objective Evolutionary Optimization. -- A Multi-Agent System for Optimal Train Scheduling in Single-Track Railways. -- EvoLLMs (Integrating Evolutionary Computing with Large Language Models (LLMs)). -- Evolutionary Bias Identification with Embeddings. -- Probing LLMs on Optimization Problems: Can They Recall and Interpret Problem Features?. -- Open and Closed-source Models for LLM-generated Metaheuristics Solving Engineering Optimization Problem. -- Beyond the Hype: Benchmarking LLM-Evolved Heuristics for Bin Packing. -- Controlling the Mutation in Large Language Models for the Efficient Evolution of Algorithms. -- Evolutionary Computation in Edge, Fog, and Cloud Computing. -- A Communication-aware and Energy-efficient Genetic Programming based Method for Dynamic Resource Allocation in Clouds. -- A Genetic Algorithm-Based Parameter Selection for Communication Efficient Federated Learning. -- Evolutionary Computation in Image Analysis, Signal Processing, and Pattern Recognition. -- Evolving Cellular Automata with Function-Based Conditional Rules for Image Filtering. -- Machine Learning and AI in Digital Healthcare and Personalized Medicine. -- Addressing Radiotherapy Scheduling with a Bin Packing Problem Formulation: A Comparative Study of Exact Solvers and Genetic Algorithms. -- A Symbolic Regression Screening Approach within Peptide Optimisation. -- Estimation of total body fat using symbolic regression and evolutionary algorithms. -- Soft Computing Applied to Games. -- Injecting Combinatorial Optimization into MCTS: Application to the Board Game boop. -- Robust search for the underlying objectives in black-box games with binary outcomes.

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## Sommario/riassunto

This two-volume set, LNCS 15612 and 15613 constitutes the refereed proceedings of the 28th European Conference on Applications of Evolutionary Computation, EvoApplications 2025, held as part of EvoStar 2025, in Trieste, Italy, during April 23–25, 2025, and co-located with the EvoStar events, EvoCOP, EvoMUSART, and EuroGP. The 50 full papers and 18 short papers presented in this book were carefully reviewed and selected from 104 submissions. These papers have been organized in the following topical sections: Part I: EvoApplications. Part II: Evolutionary machine learning; 30 years of particle swarm optimisation; Analysis of Evolutionary Computation Methods: Theory, Empirics, and Real-World Applications; Bio-inspired Algorithms for Green Computing and Sustainable Complex Systems; Computational Intelligence for Sustainability; EvoLLMs (Integrating Evolutionary Computing with Large Language Models (LLMs));

Evolutionary Computation in Edge, Fog, and Cloud Computing;  
Evolutionary Computation in Image Analysis, Signal Processing, and  
Pattern Recognition; Machine Learning and AI in Digital Healthcare and  
Personalized Medicine; Soft Computing Applied to Games.

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