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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.

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.
