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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Evolutionary Computation & Swarm Intelligence -- Surrogate Model-Assisted Evolutionary Algorithms for Parameter Identification of Electrochemical Model of Lithium-Ion Battery: A Comparison Study -- Research on Multi-modal Multi-Objective Path Planning by Improved Ant Colony Algorithm -- Local Path Planning Algorithm Designed for Unmanned Surface Vessel Based on Improved Genetic Algorithm -- A Multi-Objective Particle Swarm Algorithm Based on a Preference Strategy -- An Improved Harris Hawk Optimization Algorithm Based on Spiral Search and Neighborhood Perturbation -- S-Plane Controller Parameter Tuning Based on IAFSA for UUV -- A Reinforcement-Learning-Driven Bees Algorithm for Large-Scale Earth Observation Satellite Scheduling -- Optimal Formation of UUV Groups Based on Shape Theory and Improved Ant Colony Algorithm Under Communication Delay -- Global Path Planning for Unmanned Ships Based on Improved Particle Swarm Algorithm -- A Self-Adaptive Single-objective Multitasking Optimization Algorithm -- Improved Whale Optimization Algorithm by Multi-mechanism Fusion -- Multi-stage Objective Function Optimized Hand-Eye Self-calibration of Robot in Autonomous Environment -- An Improved Chaos-based Particle Swarm

Optimization Algorithm -- Task Location Distribution based Genetic Algorithm for UAV Mobile Crowd Sensing -- The Utilities of Evolutionary Multiobjective Optimization for Neural Architecture Search – An Empirical Perspective -- Research on Unmanned Ship Collision Avoidance Algorithm based on Improved Particle Swarm Pptimization Algorithm -- Solving Constrained Multi-objective Optimization Problems with Passive Archiving Mechanism -- A Comparison of Large-scale MOEAs with Informed Initialization for Voltage Transformer Ratio Error Estimation -- Enabling Surrogate-assisted Evolutionary Reinforcement Learning via Policy Embedding -- An Improved MPCA Algorithm with Weight Matrix Based on Many-objective Optimization -- Machine Learning & Deep Learning -- Research on Helmet Wearing Detection Based on Improved YOLOv4 Algorithm -- Research on Target Detection Algorithm of Unmanned Surface Vehicle Based on Deep Learning -- A Review On Bio-inspired Fluid Mechanics Via Deep Reinforcement Learning -- Memristor-Based Neural Network Circuit of Operant Conditioning with Overshadowing -- Continual Learning with a Memory of Non-similar Samples -- Research on Soil Moisture Prediction Based on LSTM-Transformer Model -- Graph Contrastive Learning with Intrinsic Augmentations -- Research on Global Collision Avoidance Algorithm for Unmanned Ship Based on Improved Artificial Potential Field Algorithm -- OCET: One-dimensional Convolution Embedding Transformer for Stock Trend Prediction -- A Rapid, Precise Spiking Neural Network Approach for Image Recognition -- Research on Improved Image Dehazing Algorithm Based on Dark Channel Prior -- Reinforcement Learning Based Vertical Scaling for Hybrid Deployment in Cloud Computing -- Swing-up and Balance Control of Cart-pole Based on Reinforcement Learning DDPG -- Yolov5 Outdoor Dynamic Object Detection Based on Multi-scale Feature Fusion -- Intelligent Control & Simulation -- Multi-UUV Formation Cooperative Full-area Coverage Search Method -- Multi-scale Simulations of Flow in the Upper Open Area of a Luxury Cruise Ship -- Research on Course Control Algorithm of Unmanned Craft based on Model Predictive Control -- Multi-UUV Underwater Target Cooperative Detection Task Planning and Assignment -- Multi-UUV Cooperative Navigation and Positioning Algorithm under Communication Delay -- The Research of the Consistency Control under The Condition of Time-lag of Isomerism AUV Group Communication -- Non-uniform Deformation Behavior of Magneto-sensitive Elastomer Containing Uniform Sphere Particles with “V” Arrangement -- Study on the Influence of Exit Width Change on Heterogeneous Passengers Evacuation based on the Social Force Model -- A Review of Longitudinal Vibration and Vibration Reduction Technology of Propulsion Shafting -- Design and Simulation of Heading Controller for Unmanned Boat Based on Fuzzy Neural PID -- Flexible Formation Control of Multiple Unmanned Vehicles based on Artificial Potential Field Method -- Local Path Planning Combined with the Motion State of Dynamic Obstacles -- Simulation of Airflow Characteristics of a Seabird Following a Ship Based on Steady States -- Numerical Simulation of Bionic Undulating Fin Surface Drag Reduction Structure -- Molecular Computing & Nanotechnology -- Integrated Design and Absorbing Performance Analysis for Periodic Wave Absorbing and Bearing Structures -- Diffusion Optimization Algorithm Based on Membrane Calculation -- Tuning Geometric Conformations of Curved DNA Structures by Controlling Positions of Nicks -- A Sensitive Nanothermometer Based on DNA Triplex Structure -- Microwave Absorption Properties of Double-layer Absorbing Material Based on Carbonyl Iron and Graphene Composites -- Reconfigurable Nanobook Structure Driven by Polymerase-triggered DNA Strand Displacement --

	An Analysis for Thermal Conductivity of Graphene/polymer Nanocomposites -- Simulation of Aflatoxin B1 Detection Model Based on Hybridization Chain Reaction.
Sommario/riassunto	This book constitutes the refereed proceedings of the 17th International Conference on Bio-Inspired Computing: Theories and Applications, BIC-TA 2022, held in Wuhan, China, during December 16–18, 2022. The 56 full papers included in this book were carefully reviewed and selected from 148 submissions. They were organized in topical sections as follows: evolutionary computation and swarm intelligence; machine learning and deep learning; intelligent control and simulation and molecular computing and nanotechnology.