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Nota di contenuto	-- Optimization and Intelligent Control of Underactuated Robotic Systems. -- Study of Kinematics and Trajectory Planning for the Pneumatic Soft Manipulator. -- Modeling and Nonlinear Coordinated Stabilizing Control for Dual Ship-mounted Cranes Subject to Roll and Heave Motions. -- Double closed-loop trajectory tracking control strategy for wheeled mobile robot. -- Sliding mode control of VTOL

aircraft based on stability criterion. -- Neural Network-Based Adaptive Tracking Control for Marine Lifting Arm System. -- Hierarchical Optimization-based Hybrid Whole-body Control for Wheel-Legged Robots. -- Fixed-Time Fault-Tolerant Control for Robotic Manipulators Based on Bias Neural Network with Input Saturation. -- Multi-contact trajectory planning of humanoid based on relaxed contact constraint. -- Adaptive anti-swing control for a Ship board boom crane. -- ESO-Based Tracking Controller of A Nonlinear System with Disturbance: An FAS Approach. -- Design of A Pneumatic-Driven Bionic Robot Fish Based on A Fish Tail Structure. -- Nonlinear Model predictive control based on disturbance observer for cross-domain unmanned platform. -- A Novel Bio-Inspired Optimal Control Strategy of Heavy-Duty Robots Considering Leg Momentum. -- A Quadruped Manipulator Robot that Achieves Bipedal Motion via ZMP Planning and Dynamic Control. -- A New Unified Frame and System of Bionic Variable Structure Robots: Design and Applications. -- Technology and application of modular robots. -- Development of a Bistable Multi-Joint Modular Gripper with Enhanced Adaptability and Speed. -- Online Parallel Optimization Motion Planner for Robots under Moving Obstacle Circumstances. -- Design, modeling and implementation of a novel rigid-flexible hybrid robotic arm. -- Design and Development of a Modular Pneumatic-Driven Soft Tripod Robot. -- Parallel Self-Assembly for Modular Robots Using Deep Reinforcement Learning. -- Optimal Configuration Generation of Reconfigurable Modular Robots for Specific Tasks. -- Nested Dual-chamber Origami (NDO) Actuator with Pressure Compounding and Enhanced Payload. -- A Locomotion Control Method for Modular Robot Based on PPO Algorithm. .-Design a pneumatic-driven sorting modular soft hand based on visual object detection. -- Design and Kinematic Simulation Analysis of Spherical Modular Robots. -- Pick-and-place trajectory optimization for a two-DOF cable-suspended modular parallel robot. -- MOPARAS: A Modular Parallel Spherical Robot with Position-Adjustable Connectors. -- Rolling Contact Motion Modeling for Spherical Modular Self-Reconfigurable Robots.

Sommario/riassunto

The 10-volume set LNAI 15201-15210 constitutes the proceedings of the 17th International Conference on Intelligent Robotics and Applications, ICIRA 2024, which took place in Xi'an, China, during July 31–August 2, 2024. The 321 full papers included in these proceedings were carefully reviewed and selected from 489 submissions. They were organized in topical sections as follows: Part I: Innovative Design and Performance Evaluation of Robot Mechanisms. Part II: Robot Perception and Machine Learning; Cognitive Intelligence and Security Control for Multi-domain Unmanned Vehicle Systems. Part III: Emerging Techniques for Intelligent Robots in Unstructured Environment; Soft Actuators and Sensors; and Advanced Intelligent and Flexible Sensor Technologies for Robotics. Part IV: Optimization and Intelligent Control of Underactuated Robotic Systems; and Technology and application of modular robots. Part V: Advanced actuation and intelligent control in medical robotics: Advancements in Machine Vision for Enhancing Human-Robot Interaction; and Hybrid Decision-making and Control for Intelligent Robots. Part VI: Advances in Marine Robotics; Visual, Linguistic, Affective Agents: Hybrid-augmented Agents for Robotics; and Wearable Robots for Assistance, Augmentation and Rehabilitation of human movements. Part VII: Integrating World Models for Enhanced Robotic Autonomy; Advanced Sensing and Control Technologies for Intelligent Human-Robot Interaction; and Mini-Invasive Robotics for In-Situ Manipulation. Part VIII: Robot Skill Learning and Transfer; Human-Robot Dynamic System: Learning, Modelling and Control; AI-Driven

Smart Industrial Systems; and Natural Interaction and Coordinated Collaboration of Robots in Dynamic Unstructured Environments. Part IX: Robotics in Cooperative Manipulation, MultiSensor Fusion, and Multi-Robot Systems; Human-machine Co-adaptive Interface; Brain inspired intelligence for robotics; Planning, control and application of bionic novel concept robots; and Robust Perception for Safe Driving. Part X: AI Robot Technology for Healthcare as a Service; Computational Neuroscience and Cognitive Models for Adaptive Human-Robot Interactions; Dynamics and Perception of Human-Robot Hybrid Systems; and Robotics for Rehabilitation: Innovations, Challenges, and Future Directions.