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Nota di contenuto	-- Innovative Design and Performance Evaluation of Robot Mechanisms. -- Online performance assessment of UAV formations via the belief rule base with asynchronous sequential inputs. -- Design and Kinematics Characteristic Analysis of a 3-PURU/S Photoelectric Stabilized Platform. -- Vibration Analysis and Test of Working Arm of the Anchor Drilling Robot. -- Design and Optimization of Vibration

Sieve for Specific Sandy Soil and Its Screening Motion Parameters. -- Design of a Trajectory-tracking Controller for OMRs based on Minimizing Tire Wear. -- Conceptual design, control system development and prototype fabrication of a 5-axis hybrid machining robot for handicraft carving. -- Twin mushroom picker suspension chassis design facing the narrow space. -- Kinematic Calibration Method based on Point Cloud Measurement for 3-RPS Parallel Robot. -- Design and Analysis of a Multi-panel Solar Array with Struts. -- Design and Analysis of a Consecutive Aquatic Jumping Robot Inspired by Water-dwelling Frog Hind Legs. -- Design of Multi-Mode Morphing Wings Based on Multistable Beam-type Metastructures. -- Kinematic Modeling and Analysis of Robotic Axial Tilt Errors. -- Minimum Jerk Trajectory Planning for a Redundant Actuated Three-DOF Cable-Suspended Parallel Robot with Parallelogram Architecture. -- Kinematic analysis and control strategy research of hydraulic robotic arm drive module 2-UPS+U parallel mechanism. -- Design and Envelope Grasping Analysis of Deployable Manipulator for Space Capture. -- Design, Modelling and Experiment of a Spatial Multilocomotion Tensegrity Mobile Robot. -- Inverse Dynamics Model Learning for Robotic Manipulator Based on Swarm Optimization AdaBoost-LSTM. -- Design and Experiment of a Percussion Mechanism for a Self-penetrating Drilling Robot. -- Thermal-structural analysis of a deployable metamorphic robotic grasper with finite element method. -- Design and Analysis of an Origami-Inspired Gripper with Passive Bistable Grasping Capability. -- Design of a novel multi-mode deployable metamorphic aerospace mechanism. -- Modified Gear Wolfrom Reducer Joint System for the Upper-Limb of Humanoid Robot. -- Representation and elimination of multiple joints based on PF graph. -- Optimum design of a 3-SPR parallel manipulator with large parasitic motion. -- Pneumatic Gripper Design Concurrent Shape Topology Optimization. -- An Underactuated Humanoid Multi-Finger Dexterous Hand with Adaptive Synergic Grasping. -- Kinematic Analysis and Optimal Design of 2SPS-RR Parallel Wrist in Humanoid Robot. -- An Innovative Hierarchical Approach to Multi-Rigid Body Modeling and Control Using Constraint-Following Method. -- Design and Analysis of Deployment Mechanism Based on Sliding Disc for Solid Surface Deployable Antenna. -- Design of high obstacle-crossing robot based on flexible spine structure. -- Research on Folding Method of High Storage Ratio Parabolic Cylindrical Antenna Based on Six-Fold Origami Structures. -- Adaptive Neural Network Sliding Mode Controller for Welding Robot with Uncertain Model in Nuclear Power Plant. -- Design of Optimal Control System for AGV Power Converter. -- Analysis and Prospects of the Current Research Status of Robotics for In-Situ Inspection in Confined Spaces.

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.