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| Nota di contenuto | -- Emerging Techniques for Intelligent Robots in Unstructured Environment. -- A General Collision-Free Scheme for Redundant Manipulators. -- Design and analysis of a flexible parallel robot for rope-driven upper limb rehabilitation. -- A Practical Method for Orchard Robots to Navigate Along Row Medians Using Tree Trunk Maps. -- Recursive Neural Network:Small Target Detection in Remote |

Sensing Images. -- Mobile Robot Path Planning Method based on Weight Coefficient Improved A * Algorithm. -- Wolf Pack Algorithm: An overview . -- A Discrete Time-Varying Zeroing Neural Dynamics For Solving Equality Constrained Optimization. -- Workspace Analysis Based on a Serial-Parallel Hybrid Robot: Representing Robot Capabilities. -- Path planning and gait switching for quadruped robots in perceptually complex environments. -- Real-Time Obstacle Avoidance and Pathfinding for Robot Manipulators Based on Deep Reinforcement Learning. -- A Novel Building Construction Inspection Method Based on Naive Bayes model by fusing BIM and Lidar Point cloud. -- Development and Implementation of a Six-Legged Skiing Robot for Cross-Country Skiing Techniques. -- Soft Actuators and Sensors. -- Design of the pole-climbing robot based on Yoshimura origami actuator. -- A soft pneumatic gripper integrated strain and piezoresistive sensors for grasping detection. -- Drift-Free Ionotronic Sensing. -- Design and Analysis of An Exoskeleton Robotic Actuator for Lumbar Spine Assisted Rehabilitation. -- Variable Stiffness Performance Analysis of Layer Jamming Actuator Based on Bionic Adhesive Flaps. -- Research on End-eector Decoupling Control Strategy Based on Dual Force Sensors. -- MLP-Depth: An Improved Visuo-tactile 3D Reconstruction Method Applied to TIRgel Sensor. -- Design and performance testing of electro-fluidic soft actuator. -- A Flexible Sensor based on PVC gel for Detections of Robotic Grasping. -- A Soft Amphibious Robot with Buoyancy Control and Underwater Manipulation Capabilities. -- Deep Learning Network Based Time Series Prediction Model for Cyanobacterial Concentration Using a Many-Objective Algorithm. -- Research and application of key technology of "one-click opening and closing" of hydropower station gate based on intelligent portal crane. -- Superior Performances of a Novel Soft Electroactive Actuator Based on High-purity Single-walled Carbon Nanotubes. -- A sound absorber based on IPMC electro-mechanical conversion mechanism. -- Advanced Intelligent and Flexible Sensor Technologies for Robotics. -- Design of a Wearable EEG Signal Acquisition System for Brain-Computer Interaction. -- Enhancing Robotic Hand Control with Electronic Slimebased Flexible Finger Joint Motion Sensor. -- A biocompatible strain sensor based on Ni-GaIn and SA-doped PAAM for implantable bioelectronics. -- Advancing Human-Machine Interaction Using Intelligent Wearable Acoustic Sensors in Noisy Environments. -- A Fast Online Adapting Algorithm for SEMG-Based Gesture Recognition in Non-ideal Conditions.

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.