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Nota di contenuto	-- AI Robot Technology for Healthcare as a Service. -- Continuous human acitvity recognition system by using human skeleton information. -- Egocentric Behaviour Analysis Based on Object Relationship Extraction for Cognitive Rehabilitation Support. -- A Systematic Review of Using Human-robot Interaction for Cognitive Training for Elderly with Mild Cognitive Impairment. -- Balloon Robot:

Movement Recognition, Motion of Robot and Design of Robot. -- Surrogate Model of Human Upper Limb Muscle Estimation for Mobile Device Application. -- A LLM-based Robot Partner with Multi-modal Emotion Recognition. -- Design of a New Dual-modal Ultrasonic Skull Cutting Device. -- Computational Neuroscience and Cognitive Models for Adaptive Human-Robot Interactions. -- Capsule Embedding and Emotional Metric Learning for Facial Expression Recognition. -- HVUE Planner: 3D UAV Path Planner using Hierarchical Visibility Graph in Unknown Environments. -- Research Approach of Hand Gesture Recognition based on Improved YOLOV3 network and Bayes classifier. -- Correntropy-based Bipartite Graph Factorization for Clustering. -- Flexiv Rizon-Based Multitasking Dual-Arm Robot Platform. -- CLIP Based Semantic Information Extraction and Target Alignment for Domain Generalization. -- Dynamics and Perception of Human-Robot Hybrid Systems. -- Muscle Synergy Analysis for Human-body Walking Balance Mechanism with Wearable Capacitive Sensing. -- Flexible Wrinkled Angle Sensor with One-Time Calibration for Gait Phase Monitoring. -- Model-Based Deep Learning for Distributed Maneuvering Target Tracking. -- Dynamic Modeling and Analysis of 3-PSR Space Parallel Mechanism with Wear and Lubrication Clearance of Spherical Pair. -- Three-Dimensional Iontronic Force Sensor for Robotic Force Feedback. -- Muscle force calculation of a human-exoskeleton hybrid system based on muscle synergy. -- Robotics for Rehabilitation: Innovations, Challenges, and Future Directions. -- Design of a novel vacuum head with haptic perception for negative pressure therapy on limbs. -- Machine Learning Models for Gait Phases Detection Using Surface Electromyography Signals.

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.