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Nota di contenuto	-- Advanced actuation and intelligent control in medical robotics. -- A Modified K-means GMM-GMR Hysteresis Model for Piezo-actuated Positioning System. -- Variable Impedance Control for Dynamic Torque Tracking in Stretching of Ankle Joints. -- Higher-Order Repetitive Control Enhanced FES for Wrist Intention Tremor Suppression. -- Control of a Lower Limb Exoskeleton Robot Based on

Adaptive Oscillator. -- Design of Remote Operating System for Touch-control Medical Monitoring Equipment in ICU. -- Position Domain Iterative Learning Model Predictive Control for Multi-channel Double Crystal Monochromator. -- Deformation Modeling of Interaction between Puncture Needle and Soft Biological Tissues. -- Tactile image processing and shape detection method of array tactile sensor for surgical robot based on deep learning. -- A Patient-Mounted Spherical Scissor-Like Remote Center of Motion Mechanism for Robotic-Assisted Lumbar Puncture. -- Adaptive Path Planning Method for Robot-assisted Craniotomy. -- Design and modeling of a flexible surgical robot for transnasal pituitary tumor surgery. -- Control and Drilling Through Detection in Robotic-Assisted Skull Drilling using an Automatic-releasing Tool. -- Advancements in Machine Vision for Enhancing Human-Robot Interaction. -- A Vision-based Motion Retargeting for Teleoperation of Dexterous Robotic Hands. -- Gesture Recognition of sEMG Based on Res-LSTM. -- Refined Human Activity Recognition Algorithm Using Oversampling and Combinatorial Loss in 1DCLA-Net. -- Dual-View Spatio-Temporal Interactive Network for Video Human Action Recognition. -- MorNet: Asymmetric UNet-like Network with Morphological Opening and Closing for Image Segmentation. -- DSGCN: Dual-Stream Graph Convolutional Network for Skeleton-based Action Recognition under Noise Interference. -- Online Action Detection with Gated Cross Attention Module. -- Deep Learning-Based Detection of Coating Sagging Defects. -- An Assessment System for Balance Abilities in Children with Autism Spectrum Disorder. -- A novel moving strategy of teleoperating manipulation via exo-gloves. -- A Monocular Visual Odometry Model Based on Transformer using Shifted Windows. -- CS-UNet: A LightWeight UNet Model Based On Context Information. -- Hybrid Decision-making and Control for Intelligent Robots. -- A bolt fastening robot system based on hybrid vision and its effect analysis of process parameters on fastening performance. -- Collaborative Pushing and Grasping in Complex Scenarios via a Generator-Evaluator Network with Multiple Action Primitives. -- Motion Planning and Compliance Control For Intelligent Contact Assembly Based on Force Screw Decomposition. -- An Adaptive Varying-Parameter Projection Neural Network for Redundant Manipulator with Unknown Physical Parameters. -- Force/Position Control in Robotic Grinding System for Point Clouds of Turbine Blade . -- Distributed Compensation of Robot Processing Errors Based on Errors Sensitivity. -- Fuzzy Logic and Quadtree-Based Control for Mobile Robots in Dynamic Environments. -- Contact impact suppression for robotic belt grinding based on model predictive control. -- A Novel Trajectory Tracking Method for Quad-Steering Wheel Chassis Based on MPC.

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.