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Nota di contenuto	-- Robot Skill Learning and Transfer. -- Utilizing Large Language Models for Robot Skill Reward Shaping in Reinforcement Learning. -- Research on Intelligent Dynamic Obstacle Avoidance Strategy for Space Collaborative Robots -- An Adaptive Five-Axis Sweep Scanning Path Planning Method for Variable Curvature Parts. -- Prediction of Hand Kinematics in Grasping with Mamba-based Graph Convolutional

Networks. -- Motion Planing of Powered-Caster Vehicle Based on Gaussian Process. -- Enhanced RAMPAGE Framework for mobile manipulator motion planning. -- Motion control of single-degree-of-freedom magnetic suspension system based on both position and flux feedback. -- Modeling of Human Throwing Motion from Human Demonstration Using a Hidden Markov Model. -- Robot-to-Human Object Handovers Based on Hand Key Points Detection. -- Learning Fault-Tolerant Quadruped Locomotion with Unknown Motor Failure using Reliability Reward. -- Human-Robot Dynamic System: Learning, Modelling and Control. -- Identification of Wiener-Hammerstein Model Using Stochastic Variational Bayesian Learning. -- Design and Control of Continuous Gait for Humanoid Robots: Jumping, Walking, and Running based on Reinforcement Learning and Adaptive Motion Functions. -- Deterministic Learning-based Knowledge Fusion Neural Control for Robot Manipulators with Predefined Performance. -- Research on human lower limb gait time series prediction method based on CNN and LSTM. -- Adaptive Human-like Gait Planning for Stair Climbing of Lower Limb Exoskeleton Robots. -- Improved Data-Weighted Iterative Parameter Identification Method for Accurate Dynamic Modeling of Collaborative Manipulators. -- Gaze2Atten: Analyzing Explainable Gaze Dynamics to Monitor Human Attention. -- Dynamical Feature Extraction and Pattern Recognition for Mental Workload Level with FNIRS. -- A Novel Framework of Motor-Cognitive Human-Robot Interaction Game Design with Skill Level Recognition. -- AI-Driven Smart Industrial Systems. -- Pose Calibration and Trajectory Adjustment of Robot Based on Monocular Vision. -- An Hybrid Elasto-geometrical Calibration Method for Industrial Robot using Only Position Measurement. -- Industrial Robot Joint Electromechanical Coupling Modeling and SPMSM Electrical Parameters Identification. -- Electroluminescence image-based automated defect detection for solar photovoltaic cells. -- ExpertAP: Leveraging Multi-Unit Operational Patterns for Advanced Turbine Anomaly Prediction. -- Positioning Error Compensation for Fully-Gear-Driven Robotic Manipulator Based on Visual Calculation. -- A Deformation Error Prediction Method for Industrial Robots Based on Error Superposition. -- Visual Weld Seam Tracking through Feature-Fused Kernelized Correlation Filters and Generative Adversarial Networks. -- Natural Interaction and Coordinated Collaboration of Robots in Dynamic Unstructured Environments. -- Coordinated Control for Graceful Motion of a Mobile Manipulator. -- Active Target Location and Grasping Based on Language-Vision-Action. -- Stereo Visual SLAM System with Road Constrained Based on Graph Optimization. -- An MPC-based Control Scheme for an Aircraft Towing and Taxiing System under Uncertainties.

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.