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Disciplina	005.1
Soggetti	Software engineering Application software User interfaces (Computer systems) Human-computer interaction Computer networks Artificial intelligence Software Engineering Computer and Information Systems Applications User Interfaces and Human Computer Interaction Computer Communication Networks Artificial Intelligence
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Nota di contenuto	Physical and Neurological Human-Robot Interaction -- Scene-level Surface Normal Estimation from Encoded Polarization Representation -- Configuration Synthesis of four DOF knee rehabilitation parallel

mechanism based on multiset theory -- Design and Analysis of a Four-Finger Three-Joint Underactuated Hand Rehabilitation Mechanism -- Human-Computer Interactive Digital-Twin System Driven by Magnetic-Inertia Fusion Data -- Motion Planning for Pelvis-Assisted Walking Training Robot -- Advanced Motion Control Technologies for Mobile Robots -- Research on motion control of underwater robot based on improved active disturbance rejection control -- Autonomous Navigation of Tracked Robot in Uneven Terrains -- DR-Informed-RRT* Algorithm: Efficient Path Planning for Quadruped Robots in Complex Environments -- Game-Theoretic Motion Planning for Multiple Vehicles at Unsignalized Intersection -- To Improve the Energy Efficiency: Modeling and Control for Quadrotor with Tiltable Wing -- Balance Control for inverted pendulum system via SGCMG -- Robot Lateral Following Method with Adaptive Linear Quadratic Regulator -- Research on Outdoor AGV Localization Method based on Adaptive Square Root Cubature Kalman Filter -- Optimization-based Coordinated Motion Planning for Redundant Wheeled Mobile Manipulator -- Efficient and Hierarchical Quadrotor Planner for Fast Autonomous Flight -- Formation Control of Unmanned Ground Vehicles Based on Broad Learning System -- Equilibrium-Compensation-Based Sliding Mode Control for Accurate Steering Tracking of a Single-Track Two-Wheeled Robot -- Adaptive Attitude Controller for a Six Wheel-Legged Robot Based on Impedance Control -- Design and Simulation of a Reconfigurable Multimode Mobile Robot with Folding Platform -- RBSAC: Rolling Balance Controller Based on Soft Actor-Critic Algorithm of the Unicycle Air Robot -- Design and Control of a Mobile Cable-driven Manipulator with Experimental Validation -- Autonomous Exploration for Mobile Robot in Three Dimensional Multi-Layer Space -- Model Predictive Control-based Pursuit-Evasion Game for Unmanned Surface Vessels -- Accelerated Informed RRT*: Fast and Asymptotically Path Planning Method Combined with RRT*-Connect and APF -- Intelligent Inspection Robotics -- Design and Practice of Space Station Manipulator Inspecting for Berthing Manned Spacecraft -- Research on Chain Detection of Coke Oven Inspection Robot in Complex Environment -- Powerline Detection and Accurate Localization Method Based on the Depth Image -- Dexterity of Concentric Magnetic Continuum Robot with Multiple Stiffness -- Efficient and Accurate Detector with Global Feature Aggregation for Steel Surface Defect Detection -- A Novel Radius Measurement Method for Vertical Oil Tank Based on Laser Tracking and Wall-Climbing Robot -- Kinetostatic and Cable-Hole Friction Modeling for Cable-Driven Continuum Robots -- Measurement and Application of Industrial Robot Jitter -- Attitude Control of Flapping-wing Micro Air Vehicles Based on Hyperbolic Tangent Function Sliding Mode Control -- L-EfficientUNet Lightweight End-to-end Monocular Depth Estimation for mobile robots -- Integrated Device for Controllable Droplet Generation and Detection on Open Array Chip -- Robotics in Sustainable Manufacturing for Carbon Neutrality -- Research on Energy Consumption Prediction of Pump Truck Based on LSTM-Transformer -- Magnetically Controllable Liquid Metal Droplet Robots -- Comparative Carbon Footprint and Environmental Impacts of Lifepo4 - Licoxniymn(1-x-y)O2 Hybrid Batteries Manufacturing -- Wiring Simulation of Electric Control Cabinet Based on Industrial Robot -- Intelligent Identification Approach of Vibratory Roller Working Stages Based on Multi-Dimensional CNN -- Research status and application prospects of magnetically driven micro- and nanorobots -- A Novel Transfer Learning Method for Robot Bearing Fault Diagnosis Based on Deep Convolutional Residual Wasserstein Adversarial Network -- Design and Implementation of a

Multifunctional Screw Disassembly Workstation -- Inverse Kinematics Solver Based on Evolutionary Algorithm and Gradient Descent for Free-Floating Space Robot -- Research on Robotic Extractors Based on Potential Energy Recovery Technology for Low-Carbon Footprint -- Innovative Design and Performance Evaluation of Robot Mechanisms -- -- Design of a Force-controlled End-effector with Slender Flexible Beams -- Development of an Integrated Grapple Chain for a Simultaneous Three-fingered End-effector -- Screw Dynamics of the Upper Limb of a Humanoid Robot -- Research on Selective Degradation Strategy of Redundant Degrees of Freedom for Planar 6R Parallel Mechanism -- Development and Analysis of a Wheel-legged Mobile Robot for Ground and Rail Inspection.

Sommario/riassunto

The 9-volume set LNAI 14267-14275 constitutes the proceedings of the 16th International Conference on Intelligent Robotics and Applications, ICIRA 2023, which took place in Hangzhou, China, during July 5–7, 2023. The 413 papers included in these proceedings were carefully reviewed and selected from 630 submissions. They were organized in topical sections as follows: Part I: Human-Centric Technologies for Seamless Human-Robot Collaboration; Multimodal Collaborative Perception and Fusion; Intelligent Robot Perception in Unknown Environments; Vision-Based Human Robot Interaction and Application. Part II: Vision-Based Human Robot Interaction and Application; Reliable AI on Machine Human Reactions; Wearable Sensors and Robots; Wearable Robots for Assistance, Augmentation and Rehabilitation of Human Movements; Perception and Manipulation of Dexterous Hand for Humanoid Robot. Part III: Perception and Manipulation of Dexterous Hand for Humanoid Robot; Medical Imaging for Biomedical Robotics; Advanced Underwater Robot Technologies; Innovative Design and Performance Evaluation of Robot Mechanisms; Evaluation of Wearable Robots for Assistance and Rehabilitation; 3D Printing Soft Robots. Part IV: 3D Printing Soft Robots; Dielectric Elastomer Actuators for Soft Robotics; Human-like Locomotion and Manipulation; Pattern Recognition and Machine Learning for Smart Robots. Part V: Pattern Recognition and Machine Learning for Smart Robots; Robotic Tactile Sensation, Perception, and Applications; Advanced Sensing and Control Technology for Human-Robot Interaction; Knowledge-Based Robot Decision-Making and Manipulation; Design and Control of Legged Robots. Part VI: Design and Control of Legged Robots; Robots in Tunnelling and Underground Space; Robotic Machining of Complex Components; Clinically Oriented Design in Robotic Surgery and Rehabilitation; Visual and Visual-Tactile Perception for Robotics. Part VII: Visual and Visual-Tactile Perception for Robotics; Perception, Interaction, and Control of Wearable Robots; Marine Robotics and Applications; Multi-Robot Systems for Real World Applications; Physical and Neurological Human-Robot Interaction. Part VIII: Physical and Neurological Human-Robot Interaction; Advanced Motion Control Technologies for Mobile Robots; Intelligent Inspection Robotics; Robotics in Sustainable Manufacturing for Carbon Neutrality; Innovative Design and Performance Evaluation of Robot Mechanisms. Part IX: Innovative Design and Performance Evaluation of Robot Mechanisms; Cutting-Edge Research in Robotics.