1. Record Nr. UNISA996558468403316

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Titolo	Intelligent Robotics and Applications [[electronic resource]] : 16th International Conference, ICIRA 2023, Hangzhou, China, July 5–7, 2023, Proceedings, Part VII / / edited by Huayong Yang, Honghai Liu, Jun Zou, Zhouping Yin, Lianqing Liu, Geng Yang, Xiaoping Ouyang, Zhiyong Wang
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	9789819964987
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (607 pages)
Collana	Lecture Notes in Artificial Intelligence, , 2945-9141 ; ; 14273
Altri autori (Persone)	LiuHonghai ZouJun YinZhouping LiuLianqing YangGeng OuyangXiaoping WangZhiyong
Disciplina	006.3
Soggetti	Artificial intelligence Software engineering Application software User interfaces (Computer systems) Human-computer interaction Computer networks Computers, Special purpose Artificial Intelligence Software Engineering Computer and Information Systems Applications User Interfaces and Human Computer Interaction Computer Communication Networks Special Purpose and Application-Based Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

Nota di contenuto

Visual and Visual-tactile Perception for Robotics -- 6D Pose Estimation Method of Metal Parts for Robotic Grasping Based on Semantic-level Line Matching -- GelSplitter: Tactile Reconstruction from Near Infrared and Visible Images -- GelFlow: Self-Supervised Learning of Optical Flow for Vision-Based Tactile Sensor Displacement Measurement -- CLOE: Novelty Detection via Contrastive Learning with Outlier Exposure -- Detection and Positioning of Workpiece Grinding Area in Dark Scenes with Large Exposure -- Hardware-Free Event Cameras Temporal Synchronization Based on Event Density Alignment.-- A Structure-Responsive CNN-Based Approach for Loop Closure Detection in Appearance-Changing Environments -- Visual Sensor Layout Optimization of a Robotic Mobile Adhesive Removal System for Wind Turbine Blade Based on Simulation -- Perception, Interaction, and Control of Wearable Robots -- Kinematic and Static Analysis of Flexible Link Tensegrity Robots -- An Autoencoder-Based Feature Extraction Method Applied to the Detection of Lateral Walking Gait Phase -- Sparse Adaptive Channel Estimation Based on Multi-Kernel Correntropy -- Towards Intercontinental Teleoperation: A Cloud-Based Framework for Ultra-Remote Human-Robot Dual-Arm Motion Mapping -- A Lightweight Ankle Exoskeleton Driven by Series Elastic Actuator -- Simulation Analysis of Synchronous Walking Control for Centaur System -- Kinematics Analysis of the Wearable Waist Rehabilitation Robot -- 3D Human Pose Estimation in Video for Human-Computer/Robot Interaction -- A Real-time AGV Gesture Control Method Based on Body Part Detetcion -- Predict Hip Joint Moment Using CNN for Control -- Marine Robotics and Applications -- Study on design and performance of a bionic fish driven by four IPMC fins -- Optimization of Energy Storage for A Miniature Water Jumping Robot -- Design and Research of Flatworm-inspired Marine Exploration Robot -- Coordinated Passive Maneuvering Target Tracking by Multiple Underwater Vehicles Based on Asynchronous Sequential Filtering -- Robust Tube-Based Model Predictive Control for Marine Ship-mounted Cranes -- Multi-UUV/USV Adaptive Cooperative Search Using Online State Information -- Design and Analysis of Co-Axial Twin-Propeller Trans-Media Vehicle -- Design of an Autonomous Underwater Vehicle for Targeted Water Sampling -- A Novel Motion Planning Algorithm Based on RRT-Connect and Bidirectional Approach for Free-Floating Space Robot -- A Hybrid Workspace Mapping Method Based on Force Feedback for Underwater Teleoperation Systems -- A Lyapunov-based Model Predictive Virtual Vehicle Guidance for Path Following Control of Autonomous Marine Vehicles -- Overview of Technologies in Marine Robotics -- Multi-robot Systems for Real World Applications -- An MFG Online Path Planning Algorithm Based on Upper and Lower Structure -- Intelligent Scalable and Fault-tolerant Coordination Approach for Collective Construction Robots -- Performance Analysis and Configuration Optimization of a Hexapod Platform with Flexure Hinges -- Dynamic Modeling and Control of Winch-Integrated Cable-Driven Parallel Robots Using Singular Perturbation Method -- Multi-input Multi-output Sliding Mode Control with High Precision and Robustness for a 6-PSU Parallel Robot -- Efficient Trajectory Planning for Coordinated Arrival of Fixed-Wing UAV Swarm -- Spontaneous Emergence of Multitasking in Minimal Robotic Systems -- Cooperative Control of Dual-Manipulator System with Unknown Dynamic Parameters -- Disturbance Rejection Fixed Point Control of DELTA Parallel Manipulator Mounted on Autonomous Underwater Vehicle -- Efficient Autonomous Exploration of Unknown Environment using Regions Segmentation and VRP -- Modeling of the electromagnetic launching process for a tethered-net capturing system -- Neural Network-Based Formation Control of Autonomous

Underwater Vehicles Under Disturbance in 3D Space -- Event-Triggered Model Predictive Mean-Field Control for Stabilizing Robotic Swarm -- Risk-Aware Motion Planning for Very-Large-Scale Robotics Systems Using Conditional Value-at-Risk -- Physical and Neurological Human-Robot Interaction -- An Adaptive Impedance Control Method for Human-Robot Interaction -- Design of a lower limb rehabilitation training robot based on a double four-bar synchronous motion mechanism -- Upper Limb Motion Rehabilitation Training Robot Based on A Spatial RRSS Rigid-Body Guidance Mechanism -- Mask R-CNN with attention mechanism for detection and segmentation -- Design and Variable Parameter Control Strategy of Weight Support Gait Training Robot -- CMM-based Cooperative Control Strategy of Supernumerary Robotic Limbs for Human Motion.

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.