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Nota di contenuto	User Association and Power Allocation in UAV-based SWIPT System -- Joint Location Selection and Supply Allocation for UAV Aided Disaster Response System -- Energy Minimization for Rotary-Wing UAV Enabled WPCN -- Secrecy Energy efficiency maximization for UAV-aided communication systems -- An Efficient Image Quality Assessment Guidance Method for Unmanned Aerial Vehicle -- Equal Gain

Combining Based Sub-Optimum Posterior Noncoherent Fusion Rule for Wireless Sensor Networks -- Secure Transmission Design for UAV-Based SWIPT Networks -- Spectrum Sharing Scheme for Multi-UAVs Relay Network Based on Matching Theory -- A Hybrid Multiagent Collision Avoidance Method for Formation Control -- Improved neural network 3D space obstacle avoidance algorithm for mobile robot -- An Improved A* Algorithm Based on Loop Iterative Optimization in Mobile Robot Path Planning -- Indoor Environment RGB-DT Mapping for Security Mobile Robots -- Navigate to Remember: A Declarative Memory Model for Incremental Semantic Mapping -- Variable Universe Fuzzy Control for Direct Yaw Moment of Distributed Drive Electric Vehicle -- Observer and Controller Design for State-Delay Takagi-Sugeno Fuzzy Systems Subjected to Unknown Time-Varying Output Delays -- Force control polishing device based on fuzzy adaptive impedance control -- A Study of TSK Inference Approaches for Control Problems -- FES Proportional Tuning Based on sEMG -- Application of Haptic Virtual Fixtures on Hot-line Work Robot-assisted Manipulation -- Haptic Feedback with a Reservoir Computing-Based Recurrent Neural Network for Multiple Terrain Classification of a Walking Robot -- Kinematic Characteristics Analysis of a Double-ring Truss Deployable Antenna Mechanism -- Conceptual Design of Ejection, Aerostat and Rolling Group Detectors -- Experimental Research on Dynamic Characteristics of Truss Structure for Modular Space Deployable Truss Antenna -- The Study of Wheel Driving Torque Optimization of Mars Rover with Active Suspension in Obstacle Crossing -- Designing, Modeling and Testing of the Flexible Space Probe-Cone Docking and Refueling Mechanism -- Dynamics modeling method of module manipulator using Spatial Operator Algebra -- Object Dimension Measurement Based on Mask R-CNN -- Research on Spatial Target Classification and Recognition Technology Based on Deep Learning -- Planetary Rover Path Planning Based on Improved A* Algorithm -- A Self-calibration Method of Lander Manipulator for Deep Space Exploration Mission -- A Hybrid Deep Reinforcement Learning Algorithm for Intelligent Manipulation -- Virtual-sensor-based Planetary Soil Classification with Legged Robots -- Virtual force senor based on PSO-BP neural network for legged robots in planetary exploration -- A Smooth Gait Planning Framework for Quadruped Robot Based on Virtual Model Control -- An Adaptive Parameter Identification Algorithm for Post-capture of a Tumbling Target -- Review of Research on the Chinese Space Station Robots -- Design of a Sensor Insole for Gait Analysis -- Multiple Features Fusion System for Motion Recognition -- Classification Methods of sEMG Through Weighted Representation-based K-nearest Neighbor -- A Soft Capacitive Wearable Sensing System for Lower-limb Motion Monitoring -- Fault diagnosis and prediction method of SPC for engine block based on LSTM neural network -- Real Time Object Detection Based on Deep Neural Network -- A Fast and Robust Template Matching Method with Rotated Gradient Features and Image Pyramid -- Surface Defect Inspection Under a Small Training Set Condition -- A Collision-free Path Planning Method using Direct Behavior Cloning -- 3D Pose Estimation of Robot Arm with RGB Images Based on Deep Learning -- Straightness error assessment of linear axis of CNC machine tool based on data-drive method -- View Invariant Human Action Recognition Using 3D Geometric Features -- Non-concentric Circular Texture Removal for Workpiece Defect Detection -- Sound source localization based on PSVM algorithm -- Multi-scale densely connected dehazing network -- Residual Attention Regression for 3D Hand Pose Estimation -- Fixation Based Object Recognition in Autism Clinic Setting --

Towards Deep Learning based Robot Automatic Choreography System -- An Underwater Robot Positioning Method based on EM-ELF Signals -- Stereo Visual SLAM Using Bag of Point and Line Word Pairs -- Design and Recognition of Two-Dimensional Code for Mobile Robot Positioning -- A Separate Data Structure For Online Multi-hypothesis Topological Mapping -- Indoor navigation system using the Fetch robot -- Keyframe-based dynamic elimination SLAM system using YOLO detection -- Monocular Visual-Inertial SLAM with Camera-IMU Extrinsic Automatic Calibration and Online Estimation -- An Online Motion Planning Approach of Mobile Robots in Distinctive Homotopic Classes by a Sparse Roadmap.

Sommario/riassunto

The volume set LNAI 11740 until LNAI 11745 constitutes the proceedings of the 12th International Conference on Intelligent Robotics and Applications, ICIRA 2019, held in Shenyang, China, in August 2019. The total of 378 full and 25 short papers presented in these proceedings was carefully reviewed and selected from 522 submissions. The papers are organized in topical sections as follows: Part I: collective and social robots; human biomechanics and human-centered robotics; robotics for cell manipulation and characterization; field robots; compliant mechanisms; robotic grasping and manipulation with incomplete information and strong disturbance; human-centered robotics; development of high-performance joint drive for robots; modular robots and other mechatronic systems; compliant manipulation learning and control for lightweight robot. Part II: power-assisted system and control; bio-inspired wall climbing robot; underwater acoustic and optical signal processing for environmental cognition; piezoelectric actuators and micro-nano manipulations; robot vision and scene understanding; visual and motional learning in robotics; signal processing and underwater bionic robots; soft locomotion robot; teleoperation robot; autonomous control of unmanned aircraft systems. Part III: marine bio-inspired robotics and soft robotics: materials, mechanisms, modelling, and control; robot intelligence technologies and system integration; continuum mechanisms and robots; unmanned underwater vehicles; intelligent robots for environment detection or fine manipulation; parallel robotics; human-robot collaboration; swarm intelligence and multi-robot cooperation; adaptive and learning control system; wearable and assistive devices and robots for healthcare; nonlinear systems and control. Part IV: swarm intelligence unmanned system; computational intelligence inspired robot navigation and SLAM; fuzzy modelling for automation,control, and robotics; development of ultra-thin-film, flexible sensors, and tactile sensation; robotic technology for deep space exploration; wearable sensing based limb motor function rehabilitation; pattern recognition and machine learning; navigation/localization. Part V: robot legged locomotion; advanced measurement and machine vision system; man-machine interactions; fault detection, testing and diagnosis; estimation and identification; mobile robots and intelligent autonomous systems; robotic vision, recognition and reconstruction; robot mechanism and design. Part VI: robot motion analysis and planning; robot design, development and control; medical robot; robot intelligence, learning and linguistics; motion control; computer integrated manufacturing; robot cooperation; virtual and augmented reality; education in mechatronics engineering; robotic drilling and sampling technology; automotive systems; mechatronics in energy systems; human-robot interaction.