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Nota di contenuto	<p>Intro -- Preface -- Organization -- Contents - Part IV -- Novel Mechanisms, Robots and Applications -- Optimal Design of Cam Curve Dedicated to Improving Load Uniformity of Bidirectional Antagonistic VSA -- 1 Introduction -- 2 Overall Structural Design -- 3 Stiffness Adjustment Principle and Nonlinear Compensation -- 3.1 Stiffness Adjustment Principle and Nonlinear Analysis -- 3.2 Stiffness Nonlinear Compensation -- 4 Optimization Design of Cam Drive Profile -- 4.1 Constraint Analysis of Cam Curve Design Parameters -- 4.2 Cam Curve Design Optimization and Result Analysis -- 5 Conclusion -- References -- Research on Foot Slippage Estimation of Mammal Type Legged Robot -- 1 Introduction -- 2 Foot Terrain Interaction for Slippage -- 3 Data Fusion Method Based on EKF -- 3.1 Calibration for Sensor Data -- 3.2 State Estimation by Data Fusion -- 4 Slippage Estimation and State Determination -- 4.1 Acceleration Model of Foot Slippage for Mammal Type Walking -- 4.2 Foot Slippage State Analysis Based on EKF -- 5 Experimental Verification -- 6 Conclusion -- References -- Design of Deformable Flapping Structure of Bat-Like Flapping Air Vehicle -- 1 Introduction -- 2 Structural Design -- 2.1 Flapping Mechanism -- 2.2 Deformable Mechanism -- 2.3 Coupling Design Mechanism -- 3 Simulation -- 4 Conclusion -- References -- An Autonomous Flight Control Strategy Based on Human-Skill Imitation for Flapping-Wing Aerial Vehicle -- 1 Introduction -- 2 Control Strategy -- 2.1 Manual Control -- 2.2 Human-Skill Imitation -- 3 Experiment -- 3.1 Takeoff -- 3.2 Cruise -- 3.3 Landing -- 4 Conclusions -- References -- A New Moving Target Interception Algorithm for an AUV in the Ocean Current Environment -- 1 Introduction -- 2 The Basic Model for an AUV Intercepting Moving Target -- 2.1 The Overview of Interception Problem -- 2.2 A Model of the Underwater Environment.</p> <p>3 The Proposed APF-VS-KF Algorithm -- 3.1 Planning Intercept Path of the AUV -- 3.2 Update Moving Position of Target Based on KF -- 4 Simulation Results and Analysis -- 4.1 The AUV Intercepts a Target Moving Along a Constant Straight Line in a 2-D Environment with Ocean Current of 90 -- 4.2 The AUV Intercepts a Target Moving Along a Constant Straight Line in a 2-D Environment with Ocean Current of 180 -- 5 Conclusion -- References -- Design and Control of In-Pipe Inspection Robot for Pre-commissioning -- 1 Introduction -- 2 Kinematic Properties of HL-6 Robot in Pipes -- 2.1 Overview of the LH-6 Robotic System -- 2.2 Kinematics of HL-6 Robot in Pipes -- 3 Dynamical Model of HL-6 Robot in Pipes -- 4 Control of HL-6 Robot Based on Kinetic Model -- 4.1 Control of CoM's Position and Trunk's Orientation -- 4.2 Computation of the Desired Supporting Force -- 4.3 Details of Control -- 5 Experiments -- 6 Conclusions -- References -- Research on Technology of Pipeline Detection Robot Based on Spiral Propulsion -- 1 Introduction -- 2 Pipeline Robot Design -- 2.1 Structure Composition of Pipeline Robot -- 2.2 Robot Travel Method -- 3 Robot Control System -- 4 Pipeline Inner Wall Scanning Detection Strategy -- 4.1 Point Cloud Data Acquisition -- 4.2 Poisson Surface Reconstruction -- 4.3 Pipe Roundness Detection -- 5 Experimental Verification -- 5.1 Robot Pipeline Travel Test -- 5.2 Point Cloud Surface Reconstruction -- 6 Conclusion -- References -- Dynamic Characteristics of Two-Mass Inertial Pipeline Robot Driven</p>

by Noncircular Gears -- 1 Introduction -- 2 Mechanism Principle of Two-Mass Inertial Pipeline Robot -- 3 Dynamic Modeling of Two-Mass Inertial Pipeline Robot -- 3.1 Transmission Ratio of Non-circular Gear -- 3.2 Dynamic Equation -- 4 Simulation Results and Discussion -- 4.1 System Parameters and Motion Characteristics.

4.2 Influence of System Parameters on Average Speed -- 5 Conclusion -- References -- Kinematic Performance Analysis and Optimization of a 3-DOF Parallel Mechanism for Ankle Rehabilitation -- 1 Introduction -- 2 Ankle Equivalent Model and Mechanism Design -- 2.1 Ankle Structure and Equivalent Model -- 2.2 Structure of the Ankle Rehabilitation Mechanism -- 3 Kinematic Analysis -- 3.1 Inverse Kinematic Analysis -- 3.2 The Workspace Analysis -- 4 Performance Analysis and Optimization -- 4.1 The Motion/Force Transmissibility -- 4.2 Parameter Optimization -- 5 Conclusions -- References -- Configuration Synthesis of Multi-mode Ankle Rehabilitation Robot -- 1 Introduction -- 2 The Ankle Joint Structure and The Axis LBAs Configuration -- 2.1 The Ankle Joint Structure -- 2.2 The LBAs Configurations -- 3 The Configurations of Constraint Limb and the LBAs Mechanisms -- 3.1 The Configuration of the Constraint Limb of the LBA 1 -- 3.2 The Configurations of Constraint Limbs of Other LBAs Mechanisms -- 4 The Overall Configurations of Mechanisms and Calculation of Coupling Degree k -- 4.1 The Configurations of Driving Limbs -- 4.2 The Coupling Degree Analysis of the Multi-mode Parallel Mechanism -- 5 Conclusions -- References -- Hydrodynamic Coefficient Estimation of Small Autonomous Underwater Vehicle -- 1 Introduction -- 2 Fluid Dynamics Model -- 2.1 Fluid Flow Model -- 2.2 3D Modeling and Meshing -- 2.3 Calculation Results -- 3 Simulation Experiment -- 3.1 Initial Conditions and Force Analysis -- 3.2 Analysis of Simulation Results -- 4 Conclusion -- References -- Stiffness Modeling of a Novel 2-DOF Solar Tracker with Consideration of Universal Joint Stiffness -- 1 Introduction -- 2 Structure of the Solar Tracker -- 3 Stiffness Modeling of the Solar Tracker -- 3.1 Stiffness of Revolute Joint -- 3.2 Stiffness of Universal Joint -- 3.3 Stiffness of Actuators.

3.4 Stiffness of the Solar Tracker -- 4 Simulation and Validation of the Stiffness Model -- 4.1 Stiffness Simulation -- 4.2 Stiffness Experiment -- 5 Conclusion -- Appendix -- References -- A Kirigami-Inspired Transformable Robot -- 1 Introduction -- 2 Kirigami Robot -- 3 Kinematic Modeling -- 4 Gait Analysis -- 4.1 Gait I -- 4.2 Gait II and Gait III -- 5 Experiment -- 6 Conclusion -- References -- Design and Simulation Analysis of a Magnetic Adsorption Mechanism for a Wall-Climbing Robot -- 1 Introduction -- 2 Robot Design and Static Analysis -- 2.1 Design of Cargo Hold Cleaning Robot -- 2.2 Static Analysis -- 3 Wall Transition Analysis -- 4 Design of Magnetic Circuit -- 4.1 Design of Magnetic Attraction Mechanism -- 4.2 Installation Position of the Magnet -- 5 Simulation Results -- 6 Conclusion -- References -- Design of a Variable Compliance Mechanism with Changeable Compliance Orientation -- 1 Introduction -- 2 Mechanical Design and Basic Principle -- 2.1 Mechanical Design -- 2.2 Basic Principle -- 3 Finite Element Analysis -- 4 Conclusion -- References -- Design and Analysis of a Rolling Joint Based on Gear Tooth for Continuum Robots -- 1 Introduction -- 2 Design of the Rolling Joint -- 3 Analyses -- 3.1 Kinematics Analysis -- 3.2 Strength Analysis -- 4 Simulations and Experiments -- 4.1 Kinematics Simulation and Test -- 4.2 Statics Simulation -- 4.3 Torsional Stiffness Test -- 5 Conclusions -- References -- Design of Continuum Robot Based on Compliant Mechanism -- 1 Introduction -- 2 Design and Modeling -- 2.1 The Design of Compliant Joint -- 2.2 The Size

Design of Leaf -- 3 The Kinematic Analysis -- 3.1 The Joint Bending Angle and Direction -- 3.2 The Continuum Robot Bending Configuration -- 4 Performance Validation -- 4.1 The Compressive Strength -- 4.2 The Joint Stiffness -- 4.3 The Kinematic Performance -- 5 Conclusion -- References.

Biologically Inspired Planning and Optimization of Foot Trajectory of a Quadruped Robot -- 1 Introduction -- 2 Quadruped Robot -- 3 Planning and Optimization of the Foot Trajectory -- 3.1 Biological Observation and Analysis -- 3.2 Foot Trajectory Planning Based on Bézier Curves -- 3.3 Definition of Constraints and Optimization Variables -- 3.4 Parameter Optimization Based on Particle Swarm Optimization -- 4 Simulations -- 5 Conclusions -- References -- Intensity Distribution Estimation of Radiation Source for Nuclear Emergency Robot in 3D Environment -- 1 Introduction -- 2 The Proposed Method -- 2.1 Camera Imaging Model -- 2.2 Environmental Attenuation Model -- 2.3 MLEM Iterative Algorithm -- 3 Simulation Experiment and Results Discussion -- 3.1 Design of the Simulation Experiment -- 3.2 Results and Discussion -- 4 Conclusions -- References -- Design and Development of Multi-arm Cooperative Rescue Robot Actuator Based on Variant Scissor Mechanism -- 1 Introduction -- 2 Design of Robot Actuator -- 3 Kinematics Analysis of the Actuator -- 3.1 Establish the Kinematic Model -- 3.2 Positive Solution of Position -- 3.3 Velocity Analysis -- 3.4 Trajectory Simulation -- 4 Prototype Development -- 5 Conclusion -- References -- WPFBot: A Novel and Highly Mobile Amphibious Robot -- 1 Introduction -- 2 Principle and Preliminary Control Strategy -- 2.1 Thrusting Principle -- 2.2 Underwater Motion -- 2.3 Lift-Up and Descending -- 3 System Design -- 3.1 The Overall Design and Specifications -- 3.2 Shell Sealing Design -- 3.3 Shaft Sealing -- 3.4 Electric System Integration -- 4 Simulation and Experiments -- 4.1 Underwater Simulation -- 4.2 Experiments -- 5 Conclusion and Future Work -- References -- A Class of Double-Delta-Based 6-DOF Pick-and-Place Robots with Integrated Grippers -- 1 Introduction -- 2 Architecture Design -- 2.1 Basic Structures of AMP.

2.2 Deduction of Delta Robot as Limb.

Sommario/riassunto

The 4-volume set LNAI 13013 – 13016 constitutes the proceedings of the 14th International Conference on Intelligent Robotics and Applications, ICIRA 2021, which took place in Yantai, China, during October 22-25, 2021. The 299 papers included in these proceedings were carefully reviewed and selected from 386 submissions. They were organized in topical sections as follows: Robotics dexterous manipulation; sensors, actuators, and controllers for soft and hybrid robots; cable-driven parallel robot; human-centered wearable robotics; hybrid system modeling and human-machine interface; robot manipulation skills learning; micro_nano materials, devices, and systems for biomedical applications; actuating, sensing, control, and instrumentation for ultra-precision engineering; human-robot collaboration; robotic machining; medical robot; machine intelligence for human motion analytics; human-robot interaction for service robots; novel mechanisms, robots and applications; space robot and on-orbit service; neural learning enhanced motion planning and control for human robot interaction; medical engineering.