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Soggetti	Computer simulation Robotics Special purpose computers Computer communication systems Optical data processing User interfaces (Computer systems) Simulation and Modeling Special Purpose and Application-Based Systems Computer Communication Networks Image Processing and Computer Vision User Interfaces and Human Computer Interaction
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Nota di contenuto	Modelling, Simulation, and Planning for MoleMOD -- MUAVET - An Experimental Testbed for Autonomous Multirotor Applications -- Trident Snake Robot Motion Simulation in V-Rep -- Modelling and Optimization of the Air Operational Manoeuvre -- Spatiotemporal Models of Human Activity for Robotic Patrolling -- Distributed Simulation Environment of Unmanned Aerial Systems for a Search Problem -- Note on Signature of Trident Mechanisms with Distribution Growth Vector (4,7) -- A Versatile Visua lNavigation Sstem for Autonomous Vehicles -- Visual Odometry for Vehicles' Undercarriage

3D Modelling -- Monocular Kinematics Based on Geometric Algebras -- Increased Sensitivity of Ultrasonic Radars for Robotic Use -- A Study on Direct Teleoperation Device Kinematics -- Industry 4.0 Testbed at Brno University of Technology -- Autonomous Compact Monitoring of Large Areas Using Micro Aerial Vehicles with Limited Sensory Information and Computational Resources -- Information Gathering Planning with Hermite Spline Motion Primitives for Aerial Vehicles with Limited Time of Flight -- RoScan 2.0 - Multispectral hi-Resolution Scanner -- Modeling Proprioceptive Sensing for Locomotion Control of Hexapod Walking Robot in Robotic Simulator -- Trajectory Planning for Aerial Vehicles in the Area Coverage Problem with Nearby Obstacles -- Development of Foot Contact Sensors for a Crawling Platform -- Localization Fusion for Aerial Vehicles in Partially GNSS Denied Environments -- Multi-UAV-based Reconnaissance and Assessment of Helicopter Landing Points in Manned-Unmanned-Teaming Missions -- M&S-based Robot Swarms Prototype -- Battle Management Language for Robotic Systems: Experiences from Applications on an UGV and an USV -- ROS-Gazebo Based Simulation of Co-operative UAVs -- Real-Time Localization of Transmission Sources by a Formation of Helicopters Equipped with a Rotating Directional Antenna -- PSS: An Open-source Experimental Setup for Continuous Real-world Implementation of Swarm Robotic Systems -- Route Planning for Teams of Unmanned Aerial Vehicles Using Dubins Vehicle Model with Budget Constraint -- Information Exchange Diagrams for Information Systems and Artificial Intelligence in the Context of Decision Support Systems -- Visual Data Simulation for Deep Learning in Robot Manipulation Tasks -- Incremental Learning of Traversability Cost for Aerial Reconnaissance Support to Ground Units -- Quantifying the Effects of Environmental Conditions on Autonomy Algorithms for Unmanned Ground Vehicles -- Introducing Intelligence and Autonomy into Industrial Robots to Address Operations into Dangerous Area -- Using Physics-Based M&S for Training and Testing Machine Learning Algorithms -- Adaptive Image Processing Methods for Outdoor Autonomous Vehicles -- Interaction with Collaborative Robot Using 2D and TOF Camera -- Analysis of Tensor-Based Image Segmentation Using Echo State Networks -- LAWS: How to Deal with Legal, Ethical and Practical Issue by Using Simulation -- Using Unmanned Aerial Systems in Military Operations for Autonomous Reconnaissance -- Evaluating a Helicopter Pilot HMI for Rotor Strike Warning in a Simulated Environment -- Experiment of the Tactical Decision Support System Within Company Defensive Operation -- Possibilities of Raster Mathematical Algorithmic Models Utilization as An Information Support of Military Decision Making Process -- Automation in Experimentation with Constructive Simulation -- Autonomous Air Defense Effectors Deployment Algorithms for Modeling and Simulation Purposes -- Autonomous Systems and Chinese Strategic Thinking -- Modelling of the Force Protection Process Automation in Military Engineering -- Approaches to Realise the Potential of Autonomous Underwater Systems in Concept Development and Experimentation.

Sommario/riassunto

This book constitutes the thoroughly refereed post-workshop proceedings of the 5th International Workshop on Modelling and Simulation for Autonomous Systems, MESAS 2018, held in Prague, Czech Republic, in October 2018. The 46 revised full papers included in the volume were carefully reviewed and selected from 66 submissions. They are organized in the following topical sections: Future Challenges of Advanced M&S Technology; Swarming - R&D and Application; M&S of Intelligent Systems - AI, R&D and Application; AxS in Context of Future Warfare and Security Environment (Concepts, Applications, Training,

Interoperability, etc.).