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Nota di contenuto	Monolithic Design and Fabrication of a 2-DOF Bio-Inspired Leg Transmission -- Optimization of the Anticipatory Reflexes of a Computational Model of the Cerebellum -- Evolving Optimal Swimming in Different Fluids: A Study Inspired by batoid Fishes -- Bipedal Walking of an Octopus-Inspired Robot -- Action Selection within Short Time Windows -- Modelling Legged Robot Multi-Body Dynamics Using Hierarchical Virtual Prototype Design -- How Cockroaches Employ Wall-Following for Exploration -- Machines Learning - Towards a New

Synthetic Autobiographical Memory -- A Phase-Shifting Double-Wheg-Module for Realization of Wheg-Driven Robots -- Design Principles for Cooperative Robots with Uncertainty-Aware and Resource-Wise Adaptive Behavior -- Insect-Inspired Tactile Contour Sampling Using Vibration-Based Robotic Antennae -- A Predictive Model for Closed-Loop Collision Avoidance in a Fly-Robotic Interface -- Neuromechanical Simulation of an Inter-leg Controller for Tetrapod Coordination -- A Minimum Attention Control Law for Ball Catching -- Simulated Neural Dynamics Produces Adaptive Stepping and Stable Transitions in a Robotic Leg -- Blending in with the Shoal: Robotic Fish Swarms for Investigating Strategies of Group Formation in Guppies -- Capturing Stochastic Insect Movements with Liquid State Machines -- Acquisition of Synergistic Motor Responses through Cerebellar Learning in a Robotic Postural Task -- I-CLIPS Brain: A Hybrid Cognitive System for Social Robots -- Change of Network Dynamics in a Neuro-robotic System -- Enhanced Locomotion of a Spherical Robot Based on the Sea-urchin Characteristics -- Design of a Control Architecture for Habit Learning in Robots -- Dynamic Model of a Jet-Propelled Soft Robot Inspired by the Octopus Mantle -- Hippocampal Based Model Reveals the Distinct Roles of Dentate Gyrus and CA3 during Robotic Spatial Navigation -- Trajectory Control Strategy for Anthropomorphic Robotic Finger -- Neuromechanical Mantis Model Replicates Animal Postures via Biological Neural Models -- A Natural Movement Database for Management, Documentation, Visualization, Mining and Modeling of Locomotion Experiments -- Benchmarking Human-Like Posture and Locomotion of Humanoid Robots: A Preliminary Scheme -- The Influence of Behavioral Complexity on Robot Perception -- Design and Control of a Tunable Compliance Actuator -- An Experimental Eye-Tracking Study for the Design of a Context-Dependent Social Robot Blinking Model -- Motor Learning and Body Size within an Insect Brain Computational Model -- Effects of Gaze Synchronization in Human-Robot Interaction -- Individual Differences and Biohybrid Societies -- Programming Living Machines: The Case Study of Escherichia Coli -- Force Contribution of Single Leg Joints in a Walking Hexapod -- High Resolution Tactile Sensors for Curved Robotic Fingertips -- Adhesive Stress Distribution Measurement on a Gecko -- Design of an Articulation Mechanism for an Infant-like Vocal Robot "Lingua" -- Optimising Robot Personalities for Symbiotic Interaction -- A Bio-inspired Wing Driver for the Study of Insect-Scale Flight Aerodynamics -- Characterizing the Substrate Contact of Carpal Vibrissae of Rats during Locomotion -- Self-organization of a Joint of Cardiomyocyte-Driven Robot -- Development of an Insect Size Micro Jumping Robot -- Soil Mechanical Impedance Discrimination by a Soft Tactile Sensor for a Bioinspired Robotic Root -- Fetusoid35: A Robot Research Platform for Neural Development of Both Fetuses and Preterm Infants and for Developmental Care -- High Speed Switched, Multi-channel Drive for High Voltage Dielectric Actuation of a Biomimetic Sensory Array -- A Combined CPG-Stretch Reflex Study on a Musculoskeletal Pneumatic Quadruped -- Swimming Locomotion of Xenopus Laevis Robot -- Empathy in Humanoid Robots -- HECTOR, A Bio-Inspired and Compliant Hexapod Robot -- Gesture Recognition Using Temporal Population Coding and a Conceptual Space -- Roving Robots Gain from an Orientation Algorithm of Fruit Flies and Predict a Fly Decision-Making Algorithm -- The Si elegans Project – The Challenges and Prospects of Emulating Caenorhabditis elegans -- A Self-organising Animat Body Map -- A Novel Bio-inspired Tactile Tumour Detection Concept for Capsule Endoscopy -- Electro-communicating Dummy Fish Initiate Group Behavior in the Weakly Electric Fish Mormyrus rume -- A

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| Sommario/riassunto | This book constitutes the proceedings of the Third International Conference on Biomimetic and Biohybrid Systems, Living Machines 2014, held in Milan, Italy, in July/August 2014. The 31 full papers and 27 extended abstracts included in this volume were carefully reviewed and selected from 62 submissions. The topics covered are brain based systems, active sensing, soft robotics, learning, memory, control architectures, self-regulation, movement and locomotion, sensory systems and perception. |