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Nota di contenuto	Simple Synthetic Memories of Robotic Touch -- Distributed adaptive control for virtual cyborgs: A case study for personalized rehabilitation -- Robotic active tactile sensing inspired by serotonergic modulation using active inference -- Detecting Human Distraction from Gaze: An Augmented Reality Approach in the Robotic Environment -- Learning Time and Recognition Rate Improvement of CNNs Through Transfer Learning for BMI Systems -- Optimization of EMG-derived features for upper limb prosthetic control A 3D-printed thermoresponsive artificial Venus flytrap lobe based on a multilayer of shape memory polymers -- Charge-dependent flexural rigidity of a conductive polymer laminate for bioinspired non-thermal compliance modulation -- A 3D-printed biomimetic porous cellulose-based artificial seed with photonic cellulose nanocrystals for colorimetric humidity sensing -- FRESH-printing of a Multi-actuator Biodegradable Robot Arm for Articulation and Grasping -- Wrinkle-free Sewing with Robotics: the Future of Soft Material Manufacturing -- Bioinspired soft actuator based on photothermal expansion of biodegradable polymers -- Anisotropic Actuation in Salty Agarose Gel Actuators -- Soft Electroactive Suction Cup with Dielectric Elastomer Actuators for Soft Robotics -- Miniature soil moisture sensors for a root-inspired burrowing growing robot --

Soft Tubular Strain Sensors for Contact Detection -- Bioderived Hygromorphic Twisted Actuator for Untethered Sustainable Systems -- Underactuated Robotic Fish Control: Maneuverability and Adaptability through Proprioceptive Feedback -- Design and Performance of a Cownose Ray-Inspired Robot for Underwater Exploration -- Sucker attachment and detachment patterns in Octopus vulgaris -- Understanding preload force for grasping objects with different stiffness using sensorized suction cups -- Development, Modeling, and Testing of a Passive Compliant Bistable Undulatory Robot -- Synthetic Nervous System Control of a Bioinspired Soft Grasper for Pick-and-Place Manipulation -- Fly H1-cell distance estimation in a monocular virtual reality environment -- A Dynamic Simulation of a Compliant Worm Robot Amenable to Neural Control -- Inchworm locomotive soft robots actuated by a single pneumatic line -- A Synthetic Nervous System for On and Off Motion Detection Inspired by the Drosophila melanogaster Optic Lobe -- Driving hexapods through insect brain -- Weighting elementary movement detectors tuned to different temporal frequencies to estimate image velocity -- Comparison of Trochanteral Strain in Locomotor Model Organisms using Robotic Legs -- An insect-inspired soft robot controlled by soft valves -- Effects of tarsal morphology on load feedback during stepping of a robotic stick insect (Carausius morosus) limb. .

Sommario/riassunto

This book constitutes the proceedings of the 12th International Conference on Biomimetic and Biohybrid Systems, Living Machines 2022, in Genoa, Italy, held in July 19–22, 2022. The 44 full papers and 14 short papers presented were carefully reviewed and selected from 67 submissions. They deal with research on novel life-like technologies inspired by the scientific investigation of biological systems, biomimetics, and research that seeks to interface biological and artificial systems to create biohybrid systems. The conference aims to highlight the most exciting research in both fields united by the theme of “Living Machines.”.