

Special Issue

Autonomous Robotics for Exploration

Message from the Guest Editor

Autonomous robotics have become a key aspect of exploration, with applications requiring monitoring and data collection of a wide range of conditions from dangerous environments (geologically unstable regions, disaster zone reconnaissance, radiation zones), inaccessible environments (planetary exploration, undersea mapping, spatially confined environments) to large-area surveillance (swarm exploration, search and rescue). A variety of considerations are taken into account when designing such robots. In robot geometry, utilizing wheel-based, leg-based, or nature-inspired locomotion for land-based robots; traditional propellers or fish-like motion in water-based robots; or fixed-wing and quadcopter arrangements in UAV applications, are all key choices for achieving successful motion across the required environment, in particular where terrain is difficult to traverse. Sensor systems need to monitor both the state of the robot and the surrounding environment whilst collecting and possibly processing the required data. Control looks to optimise navigation and may include programmed algorithms or AI-based learning.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

It is my great pleasure to welcome you to our open access journal, *Robotics*, which is dedicated to both the foundations of artificial intelligence, bio-mechanics and mechatronics, and the real-world applications of robotic perception, cognition and actions. The 21st century is the robotics century and intelligent robots will change our lifestyle forever. Let us work together toward the realization of intelligent robots step by step. It is great fun to create intelligent robots and imagine their practical applications. *Robotics* is now ready to serve you in the long journey towards such a goal.

Editor-in-Chief

Prof. Dr. Marco Ceccarelli

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