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Robust and Resilient Robots

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Message from the Guest Editor

Dear Colleagues,

Resilience is known to human society but less known to engineering. Resilience is not elasticity nor reliability but it is a property of a system, measuring the ability of a system to recover from a partial damage on its own resource (CIRP Annals, 60:469-472, 2011). The concept of resilient robots has been recently proposed (On the concept of resilient robots, Industrial Electronics and Applications (ICIEA), 2011 6th IEEE Conference on). A resilient robotic system possesses the property of resilience by its structure along with its control or operation management. A full resilient robot is composed of the following systems: damage monitor, change planner as well as scheduler, and change execution management. Thus, a resilient robot goes beyond a self-reconfiguration system. A resilient system has important applications in the areas where an external assistance to a robot is prohibiting, e.g., rescuer, space exploration, see exploration, implanted devices in human body.

Papers are solicited in the following areas (but not limited): robot fault detection and diagnosis, under-actuated reconfiguration, change/reconfiguration planning, change/reconfiguration scheduling, change/reconfiguration execution and control, docking-undocking, new architecture of robots for improving the resilience.

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Guest Editor



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Special Issue



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Editor-in-Chief

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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.

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