Special Issue

Advancements in Robotic Design, Manufacturing, and the Action-Perception Loop

Message from the Guest Editors

Recent advancements in robotics research have underscored the importance of exploiting the link between robot perception and action, which, if considered as interconnected entities of a loop instead of separate processes, could enhance the geometric interpretation of perceptual information, the estimation of object models, the integration of grasp planning with machine learning, and long-horizon manipulation task sequences in industrial settings. Investigating the crucial relations between robot perception and action may contribute to overcoming current limitations and enable a new era of industrial automation to be unlocked. This Special Issue aims to connect scientists who are actively working at the intersection of robotic manipulation and perception. Contributions to this Special Issue should present recent advancements and perspectives concerning robotic manipulation and perception for a diverse range of topics, including, but not limited to, deformable object manipulation, grasp stability, dexterous manipulation, active and interactive perception, robot learning, computer vision, tactile sensing, and learning from demonstration.

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Designs (ISSN 2411-9660) is a peer-reviewed and open access journal which provides a unifying research framework for a wide range of engineering designs of disciplines and industrial applications, including mechanical engineering, electrical engineering, civil engineering, mechatronics, aerospace engineering, bioengineering, energy engineering, industrial engineering and manufacturing systems are of interest. We would like to invite you to contribute to the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

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