Topical Collection

Robotics and 3D Computer Vision

Message from the Collection Editors

With the appearance of the low-cost Microsoft Kinect sensor, followed by other time-of-flight and structured light sensors with affordable prices, research in the field of 3D computer vision exploded overnight. Previous stereo vision with software-based image processing was outlier-prone. Laser-based Lidar, on the other hand, is amongst the most accurate of the three groups of sensors, but this type of sensor is still relatively expensive. Recent advancements in stereo vision algorithms and hardware have resulted in fast and accurate setereo vision sensors with hardware-based image processing. The current rapid innovation in robotics is driven by 3D vision capabilities. For mobile robots, and as industrial robots to successfully work in unstructured environments, accurate 3D scene reconstruction and understanding as well as localization capabilities are required. This Topical Collection aims to cover different aspects of the recent advances of 3D vision, especially in the field of robotics, including 3D scene reconstruction and understanding, localization, 3D object recognition and representation and applications of 3D vision in various field.

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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