Special Issue

UAV-Based Sensing Techniques, Applications and Prospective

Message from the Guest Editors

The application of unmanned aerial vehicles has been increasing in civil arena, where their high maneuverability can play an essential role in sensing and interpreting the environment by acquiring data from multiple key positions. The main challenge is whether the UAVs can accurately estimate their position and navigate regarding their environment and the objects they have to interact with (e.g., for inspection and physical manipulation). The mentioned challenges require the successful exploitation of sensor fusion based on onboard sensors, in which vision and 3D LiDAR play a key role, not only in positioning, but also in scene recognition, see and avoid, as well as control and navigation itself. Several techniques that are now propelling the improvement in UAV autonomy are visual inertial odometry (VIO), visual semantic SLAM, deep learning for object recognition and localization, as well as direct reinforcement learning for planning and control, among others. This Special Issue aims to bring together top researches to contribute to UAV use as a very versatile aerial robot for sensing of the environment for a vast number of industrial applications.

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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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