



IEEE Sensors Council



CALL FOR PAPERS IEEE Sensors Journal Special issue on **RGB-D Sensors and 3D Reconstruction**

RGB-D Sensors are a specific type of depth-sensing devices that work in association with a RGB (red, green and blue color) sensor camera. They are able to augment the conventional image with depth information (related with the distance to the sensor) in a per-pixel basis. In recent years, depth sensors have encouraged the communities of computer vision and computer graphics to explore novel solutions based on RGB-D images. The depth information may provide a significant contribution to solve or simplify many challenging tasks, such as object detection, scene parsing, pose estimation, visual tracking, semantic segmentation, shape analysis, image-based rendering, and 3D reconstruction. For example, once the depth formation of the scene is obtained, the corresponding 3D model can be directly constructed by mapping approach. In other word, depth-based 3D reconstruction does not need to run the routines of structure from motion (SFM) which is too complex, and produce high-quality geometric model. Thus, RGB-D sensors provide a chance for the 3D reconstruction communities.

Although several RGB-D sensors, such as Microsoft Kinect, Structure IO, ASUS Xtion Pro, and Intel RealSense, have appeared on the market, and studied by the communities of computer vision and graphic, from a user perspective, the quality of depth images from existing RGB-D sensors still need to improve. At the same time, computer vision and machine learning communities have proposed many novel approaches to handle depth images, individually or fused with other information such as normal and RGB images. Those novel methods have also brought new opportunity for researchers of 3D reconstruction.

It is intended that this Special Issue of the IEEE Sensors Journal will show the state-of-the-art in RGB-D sensors and 3D reconstruction. Original research contributions, tutorials and review papers are sought in RGB-D sensors and 3D reconstruction related areas including (but not limited to):

- Novel RGB-D devices
- Mobile robotic sensors
- Depth camera arrays
- Depth-map denoising and super resolution
- 3D reconstruction
- RGB-D acquisition techniques
- Depth data processes
- Point cloud modeling and parsing
- Depth image-based rendering
- Depth image super resolution and denoise
- Fusion of the RGB and depth images
- 3D biometrics
- RGB-D data applications
- Depth datasets and benchmarks

Solicited and invited papers shall undergo the standard IEEE Sensors Journal peer review process. All manuscripts must be submitted on-line, via the IEEE Manuscript Central™, see <http://mc.manuscriptcentral.com/sensors>. When submitting, please indicate in the “Manuscript Type” roll down menu, and also by e-mail to Ms. Lauren Young, l.young@ieee.org, that the paper is intended for the “RGB-D Sensors and 3D Reconstruction” Special Issue. Authors are particularly encouraged to suggest names of potential reviewers for their manuscripts in the space provided for these recommendations in Manuscript Central. For manuscript preparation and submission, please follow the guidelines in the Information for Authors at the IEEE Sensors Journal web page, <http://www.ieee-sensors.org/journals>

Deadlines:

Manuscript Submission:	September 30, 2019
Notification of Acceptance:	February 28, 2020
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