

Abstract

In this paper we present an image data-set of different omnidirectional systems. The images include full information of colour, depth, instance segmentation and room layout. This dataset aims to help in the training and test of different neural networks and development of computer vision algorithms.

Image information

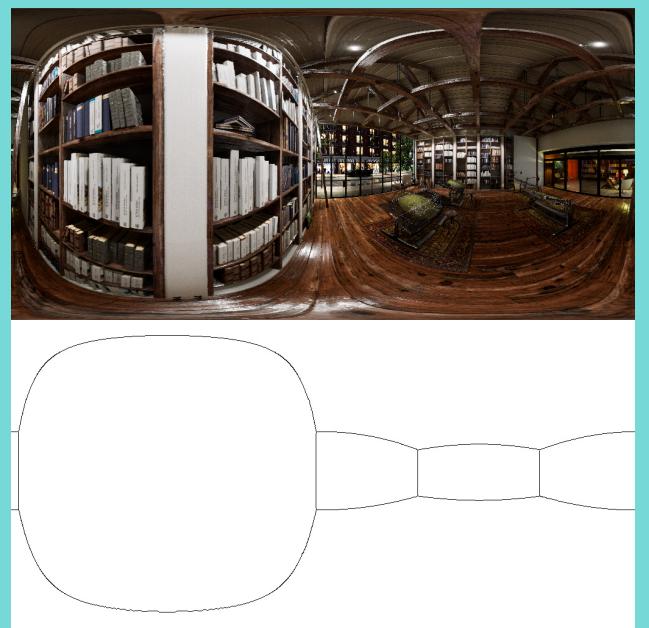
From the tool OmniSCV [1], different information can be obtained from Virtual Environments generated with the UnrealEngine 4. The direct information is: RGB, instance segmentation, depth.



Applications

From the images that can be obtained with OmniSCV, a data-set of omnidirectional images has been generated. Also, different labellings have been implemented for different applications. Examples are:

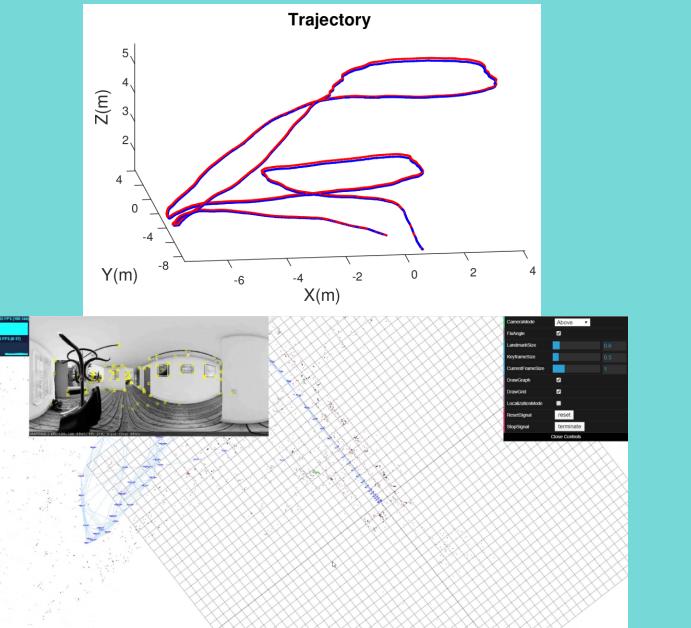
Layout recovery [2,3]



Instance segmentation

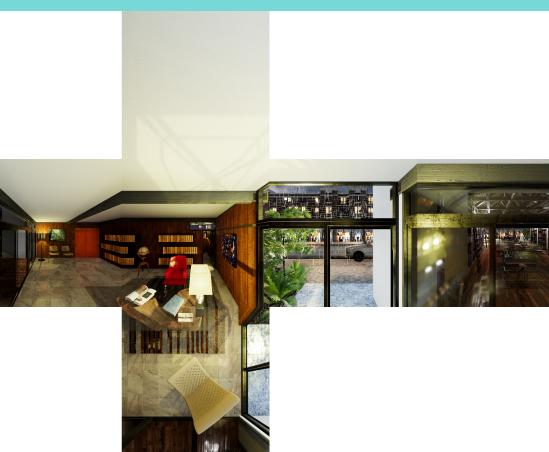


SLAM[4]



Omnidirectional systems

Different omnidirectional system where defined in the tool. Central projection systems come from the same cube-maps. The most used omni-directional systems are the fish-eye images, catadioptric systems and panoramas as the equirectangular.



Other systems are also implemented. Non-central systems do not have a unique cube-map, so the acquisition is unique for each image. The systems implemented are the circular panorama and catadioptric systems.

