Building an Automatic 3D Vision Recognition System Assisted by Smart Tags

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Abstract

Object recognition in a 3D virtualized environment can be improved by adding additional sources of information. The involvement of several devices addressed to data acquisition allows improving the existing recognition methods by man-aging a smart tagged universe through ubiquitous programming.

In this paper we present the building of an information system designed for the acquisition of several objects" attributes. These objects are part of a universe which will be virtualized by means of a 3D scanner. The system is conceived to im-prove the object recognition methods, by adding some smart information to conventional recognition algorithms. The use of smart tags proposed in this article represents an important advance regarding previous works, where passive RFID tags and short range scanners were employed. This new system will allow the user to work with complex indoor scenes, virtualized by long range scanners. More specifically, this paper also shows the implementation carried out about Near Field Communication (NFC), which is employed in a first prototype developed to send and receive some information from tags located on several objects of our universe.