Computer Graphics - Augmented Reality - Project 2021/2022

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Application for visualizing 3D models and their instructions.

The objective of this project is to scan a QR code , visualize the 3d model , interact with them and navigate through the instructions.

The application is built and tested with an Android Device, Unity, Vuforia.

There are five different QRs bound to five different type of furniture (QR 1 = modern Chair , QR 2 = Sofa , QR 3 = Table , QR 4 = Office Chair , QR 5 = Chest of Drawers). It's very easy to change the main topic of the models (industrial purpose).

The Main Camera is the Vuforia AR Camera.

The interaction types are : Translate , Scale and Rotate. Done using gestures like pinch , drag and twist. The scripts of the interactions are taken from a Library available in the Unity Asset Store (Lean).

For the creation of the QRs code it was used a website. To storage the QRs it was used Vuforia Engine Developer Portal (the same tool that provides you with an available Vuforia Key)

Behind the model there is the instruction that tells you how to build the piece of furniture. You can move the pages forward and backward using two different Vuforia Virtual Button attached to two different scripts (ForwardButton.cs and BackwardButton.cs) . The visualization of the instruction is managed as follows : five different canvas , one for each model. The Canvas , in the hierarchy , is child of the QR code. In this way only one canvas at the same time is visible by the user. In the hierarchy , the Canvas has a child which is an image that displays the first page of the instruction and the scripts above change the sprite of the Image if the user press the Virtual Button.

The Virtual Buttons by default are transparent , so in order to see them , we used planes positioned right above the Virtual Button. They are triggered by occlusion and you can set three different types of sensitivity. For the project we set it as medium.


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