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AUGMENTED REALITY

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The technology of augmented reality, or abbreviated ‘AR’, is a relatively new but rapidly developing technology. It is gaining popularity and is becoming more widely-used.

Augmented reality is an enhanced version of reality where live direct or indirect views of physical real-world environments are augmented with superimposed computer-generated images over a person’s view of the real world, thus enhancing the user’s current perception of reality.

AR can be used in such areas like commerce, medicine, military applications, games, etc.

There are 4 categories of AR technology, which are defined as follows:

– marker based AR, which requires a special visual object and a camera to scan it;

– markerless AR, which is location-based or position-based augmented reality that utilizes a GPS, a compass, a gyroscope and an accelerometer to provide data based on the user’s location;

– projection-based AR, which projects synthetic light to physical surfaces and in some cases allows users to interact with it;

– superimposition-based AR, which either partially or fully replaces the original view of an object with a newly augmented view of the same object.

This technology works as follows: in a special development environment, 3D game engine, some scenes are created and pre-created markers are added to these scenes. They are linked to virtual objects or models, which results in creating necessary augmentations. The proportions and position of these objects strictly correspond to the proportions of markers. As a result, when a marker is seen by the camera of the device and is recognized by recognition algorithms, virtual objects appear on the screen; they are arranged in the same way as they were located in the scene developed previously.

If you want your images to become special markers, they need to be sent to the special service of Vuforia for processing. This service creates a specialized package based on them, which is a kind of database of markers (it is called *image-target database*). This service creates a set of labels for the images that allows the recognition algorithms to recognize the markers and identify their position in space.