

THE MAIN DIRECTIONS OF USING KINECT TECHNOLOGY

Nosyk A.M.

*National Technical University
«Kharkiv Polytechnic Institute», Kharkiv*

Kinect is a motion recognition technology developed by Microsoft that allows users to interact with digital content and control devices without using physical controllers. Kinect technology uses a combination of depth-sensing cameras, RGB cameras and microphones to capture and interpret user movements, gestures and voice commands. This data is then processed to create various applications such as gaming, virtual reality, augmented reality, 3D scanning, and other interactive experiences [1].

This paper examines the Kinect technology used in game consoles such as Xbox 360 and Xbox One, as well as in the separate sensor platform Kinect Azure.

Kinect for Xbox 360 (first generation) and Kinect for Xbox One (second generation) were developed by Microsoft as an accessory for the Xbox 360 and Xbox One game consoles, respectively. Kinect for Xbox 360 uses a 3D structured light scanning method. The Kinect sensor emits infrared light onto a scene or object and captures the reflected light using an infrared camera. By analysing the deformation of the rendered light patterns, Kinect is able to calculate depth information and create a 3D cloud of points in the scene or object being scanned. This method allows for real-time depth detection and tracking of human movements, making it suitable for interactive games and other applications beyond traditional 3D scanning. Kinect Xbox One is an extension of Kinect technology for Xbox 360 and features improved depth detection, RGB camera and microphone technology and allows users, like Xbox 360, to control games and move around using body movements, gestures and voice commands, and has better tracking accuracy, voice recognition and large room performance.

As a standalone sensor platform designed for professional use, Azure Kinect can be used to create virtual and augmented reality experiences, and provides advanced depth sensing and RGB camera technology. Thanks to its advanced capabilities, Kinect Azure can be used for 3D modelling, content creation, interactive user interfaces, virtual tours, and other multimedia and Internet applications. Azure Kinect is special because it is designed with cloud technologies in mind, not only Microsoft Azure, but any cloud provider.

The Kinect devices in question can be used for interactive learning and for creating physical simulations. The use of Kinect devices may vary depending on the specific task, software, and settings.

References:

1. Vangos Pterneas. Mastering the Microsoft Kinect : Body Tracking, Object Detection, and the Azure Cloud Services. – Apress, 2022. – 282 p.