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VR HAPTIC GLOVE

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At the present time, we can observe a growing interest in the use of virtual reality. This is related to the attempt to make the virtual world a reality under the name "Metawersum" by the company Meta (former Facebook), as well as the development of human-computer interfaces that allow you to feel more and more elements of the virtual world, from visual to tactile sensations. This paper is an attempt to answer the question of whether, with a limited budget for hardware components, it is possible to design a functional VR glove with haptic feedback. The work presents the concept of building a haptic glove with special attention to wireless communication elements and visualization of movements in the Unity environment. The developed model of the glove, equipped with a 9-axis IMU sensor, makes it possible to read the angular position as Euler angles or quaternions, in addition, based on linear acceleration the displacement of the glove in space is read. The glove model is also equipped with goniometric sensors that measure fingers flexion. Feedback, which simulates tactile feelings, has been implemented using miniature vibrating elements placed under fingertips. The vibrating elements are activated by virtual collisions in the Unity environment. In future work, the plan is to use the developed solution to conduct patient rehabilitation using virtual space.