Sheer Feedback Haptic Devices

Published date: Jan. 15, 2015

Technology description

Invention Summary
A compact, lightweight, and simplistic method for determination of surface softness has been developed. This touch feedback device is able to provide a virtual rendering of what a surface feels like based on how stiff or soft the surface is (also referred to as squishiness). This device is responsive to the user’ s force and displacement and can be controlled and changed to accommodate different grip or finger hold formats. When combined with an advanced haptics controller and a virtual reality (VR) headset, the user feels like they are actually seeing and feeling the environment/surface displayed. This patent-protected technology may be incorporated into game controllers, handheld devices, medical devices, touch screen displays, or anywhere augmented reality (AR)/VR with the sensation of touch/ squishiness is valued.
This technology may be incorporated into products sold in a variety of markets including video games, medical feedback, automobiles, and computer equipment. The global market for VR used in gaming was valued at $566.9 million in 2014 and is expected to reach nearly $9.9 billion by 2020, with a compound annual growth rate (CAGR) of 58.8%. Immersive technology used in gaming held the largest market share, valued at $396.7 million in 2014 and is expected to reach nearly $6.9 billion by 2020, with a CAGR of 58.6%. With today’ s gamers looking for more sophisticated and immersive gaming experiences, the demand for immersive technology will increase significantly for the foreseeable future. The amount of AR and VR devices sold is expected to rise from 2.5 million in 2016, to an enormous 24 million in 2018.

Advantages

Small and portable allowing for low power consumption and easy integration
Active motion capabilities, meaning changing stiffness/softness levels can be detected almost instantaneously
Creation of tactile data that can be used to analyze various surfaces and tied in with audio and visual cues

Institution

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