

Tactile Gaming Vests: The Fourth Dimension In Gaming Reaches New Level Of Pain

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Half-Life 2 scene via sharkyextreme.com

(PhysOrg.com) -- Have you ever been downed by a shot to your gut from a USP Match in [Half-Life 2](#)? Not yet? Well, if you crave realism in your gaming experiences, you'll want to know about the development of the Tactile Gaming Vest (TGV).

Graduate robotics students at the University of Pennsylvania, motivated by realism trends in movies and gaming, decided to take a step into a new dimension - the fourth dimension of [haptic reality](#), the tactile simulation of forces that impact characters in a [virtual world](#) or on the big screen.



Tactile Gaming Vest. Photo by Saurabh Palan

Unimpressed by 4-D developments they had seen at haptics conferences and theme parks, the team of students - Saurabh Palan, Ruoyao Wang, Nathaniel Naukam, Edward Li, and Katherine J. Kuchenbecker - set out to make gunshots, knife slashings, and the feeling of blood dripping from the wounds more realistic than the other gadgets they had experienced provided.

Using a first person shoot game (FPS Game: HALF LIFE 2 - Gun Shot Moment), the team set up their own game mode source code with a Source Engine wiki, complied it, and ran it through a Valve Steam platform. Then they designed their own map and game level and created their own 3-D first person shooter game.

The TGVs are stuffed with [solenoid](#) actuators in the chest and on the front and back of the shoulders, and they are timed to go off when your character gets shot. They even get you *where* your character gets shot. Getting stabbed is no sweat either. The vibrating motors embedded around the vest simulate that experience. Oooh. Aaah. Why the vest can even simulate blood flowing from a wound. Ugh.



Go away dude. I'm about to get shot! Photo by Saurabh Palan

But there's more to come. More sensations. More reality. But not much more pain. Palan and team want the vest to communicate the suddenness of the impact, but not *too* much pain.

And I should add, that the Tactile Gaming Vest is not being developed just for gamers, but for 4-D movies, and the military to simulate what happens in battle. Now, that's [realism](#).

More information: -- iRobotist.com
-- [IEEE Spectrum](http://IEEE.org)

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