

'Rock Vibe' brings electronic music game to blind

February 23 2012, By Jennifer Pittman

Bridging a divide between sighted and blind gamers, University of California, Santa Cruz graduate Rupa Dhillon has created a version of the musical rhythm "Rock Band" game that everyone can play.

"There aren't very many games that cross the divide between sighted users and people who are blind," said Dhillon, 27, who is sighted and known for her prowess playing Queen's "Bohemian Rhapsody."

"[Rock Band](#)," a popular game created several years ago by Boston-based Harmonix Music Systems, visually cues players to press buttons on a "Rock Band" instrument, [computer keyboard](#) or MIDI controller connected to their PC or Mac. Players are scored according to how well they follow cues.

"Rock Vibe" translates the [visual cues](#) from "Rock Band" into tactile feedback so people who are blind or sighted can play. Players wear a belt or glove containing vibrating motors. They can also turn on a talking interface to navigate the game without a screen reader.

Audio games on the market for visually impaired people tend to be "old school" according to Caitlin Hernandez, a visually impaired UCSC student who serves as a peer mentor at the UCSC Disability Resource Center. She was one of the early testers of the game and is featured in a promotional video about the game posted on YouTube at www.youtube.com/watch?v=gvgIXEdAZpo.

"It was really cool to play 'Rock Vibe' because all of my friends play 'Rock Band' and I always just sat by and listened," Hernandez said on the video. "So, it was cool to jam along with the song that everyone's always playing ... People would love to play this."

Dhillon who is currently working in Mountain View, Calif., as a curriculum developer for summer camps has been funding the project herself. She recently launched an online project fundraiser on Kickstarter.com to get enough cash to polish up a second version of the game. In just a few weeks, she's raised about \$12,500 in pledges from 29 backers, including a large financial endorsement from Alex Rigopulos, chief executive officer of Harmonix Music Systems who has been a strong supporter, according to Dhillon.

If she raises \$16,500 by Feb. 25, she'll be able to buy new tools and will donate some of the two-player games to organizations that work with blind children. On Kickstarter, however, to minimize funding risks, a project must reach its funding goal by a specific deadline or no money changes hands.

The Kickstarter website accepts donations of \$1 or more although higher donors get a few perks such as the opportunity to request a favorite song be included in the game, including original works, which would come along with a featured artist page on the new Rock Vibe website.

"It's really meaningful," said Michael Logue, a Soquel music technology consultant, who has signed up to support Dhillon's Kickstarter drive.

"The games that have been created for visually challenged people are lame. There's no way for you to connect with your other sighted friends. If you have a game that both sighted or non-sighted people can play together, that is challenging for both and culturally relevant like 'Rock Band' was, it gives you a way to connect."

Dhillon earned a bachelor's degree in music technology at the London Metropolitan University and graduated from the UCSC Fine Arts Digital Arts and New Media master's degree program in 2009. She dreamed up the project in 2008 with friends Troy Allman and Molly Landea. They were working on a UCSC human computer interaction course assignment to create a system that has societal impact.

"What I wanted was students in this class to think about what and who the system would be used for, for the students to have self-reflection," said Sri Kurniawan, associate professor of Computer Engineering at UCSC. The class has spawned a one-handed strategy electronic game, communications software for people with autistic spectrum disorder and a wedding ring-bearing robot (a gift for the couple who has everything).

"The definition of 'societal impact' is broad," said Kurniawan, who has mentored Dhillon through design challenges in the game and has also helped her present it at various conferences throughout the country.

"People can immediately see this would be helpful for people," Kurniawan said.

'ROCK VIBE' AT A GLANCE

WHAT: "Rock Vibe" makes it possible for blind and sighted gamers to play a [musical rhythm game](#) on their PCs or Macs.

HOW: Players wear a belt or gloves with vibrating motors. They launch the "Rock Vibe" software, load a song and level and respond to vibrations by pressing keys on the computer keyboard, "Rock Band" controller, or MIDI controller to make the song play properly. At the end of the song, players are scored.

WHO: Rupinder Dhillon, rupadhillon.com

INFO: 530-713-1581 or rockvibegame.com ; rockvibe.wordpress.com

FINANCIALS: Self-funded to date but seeking \$16,500 in donations by Feb. 25 through Kickstarter.com. [www.kickstarter.com/projects/r ... be-accessible-gaming](http://www.kickstarter.com/projects/rupadhillon/rock-vibe-accessible-gaming)

YouTube Video: www.youtube.com/watch?v=gvgIXEdAZpo

HOW ROCK VIBE WORKS

- Player puts on belt or glove containing vibrating motors.
- Player starts "Rock Vibe" software and loads a song and level.
- Music starts playing and player starts feeling vibrations on different parts of the body.
- Player presses a button on a "Rock Band" controller or computer keyboard that corresponds to where the vibration was felt.
- If they hit the right button, the score increases and the song continues playing.
- If they hit the wrong button, the score doesn't increase and a filter kicks in or the song's pitch shifts to let the player know they've made a mistake.

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