

# Playing a video game using thoughts

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Credit: © 2015 MindMaze

The start-up MindMaze has opened up a new dimension in the world of video games: moving with thoughts through a virtual environment or even directly interacting through certain emotions. Introduced earlier this month at the Game Developers Conference in San Francisco, the MindLeap system is a big hit. The company has also just raised 8.5 million francs, and its CEO, Tej Tadi, was today named among the Young Global Leaders.

A cap fitted with sensors and virtual immersion glasses with [motion sensors](#)—this is how the user enters another world. The system merges augmented reality with [virtual reality](#). The environment adapts to the user's hand movements, which are visible. Emotions and sensations felt in the moment actually prompt new virtual elements. Imagined movements are performed by the avatar, as if it were directly connected to the user's brain. The joystick is officially obsolete.

MindMaze, an EPFL spin-off developed around a device for the rehabilitation of stroke victims, has used its expertise to launch this new system. Still in the prototype stage, the device goes a step further in advancing gamers' immersive experience. A combination of cameras and depth sensors placed in the front of the glasses detect the user's hands, making it possible for the player to interact in an immediate way in the [virtual environment](#). Without employing any [game developers](#), the start-up has so far developed a few simple examples that enable one to playfully test the innovations. One of them makes flames dance on a player's fingertips. When the player relaxes sufficiently, the fire turns to ice.

The second innovation is a cap that uses brain activity detection technology to "read" a player's mind. It captures waves of certain areas of the brain to detect movement, emotions or even a state of stress or relaxation. "From the moment that there is an identifiable and repeated pattern in the brain, it is possible to match a control system," says Tej Tadi, the company's CEO. An avatar can therefore grab a cup or open a door through the thoughts of the gamer. One example of this ability to read thoughts is a game that moves spheres based on one's alternating states of relaxation and stress.



MindLeap like it could be commercialized MindMaze. Credit: MindMaze

MindMaze, which has just concluded a round of financing that raised 8.5 million francs, made an impressive debut in late February at the Game Developers Conference in San Francisco. The company's goal now is to release software for the development of games adapted to their system. The next improvements are expected to see the cap replaced with a less obtrusive immersion window that contains all the necessary sensors. Tej Tadi hopes to market the device as soon as the end of 2015.

The CEO of this young company, founded in 2012, is also today being named among the Young Global Leaders. These talented young people under 40 are chosen internationally by the World Economic Forum for their professional accomplishments, their commitment to society and their potential.



Credit: MindMaze

Provided by Ecole Polytechnique Federale de Lausanne

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