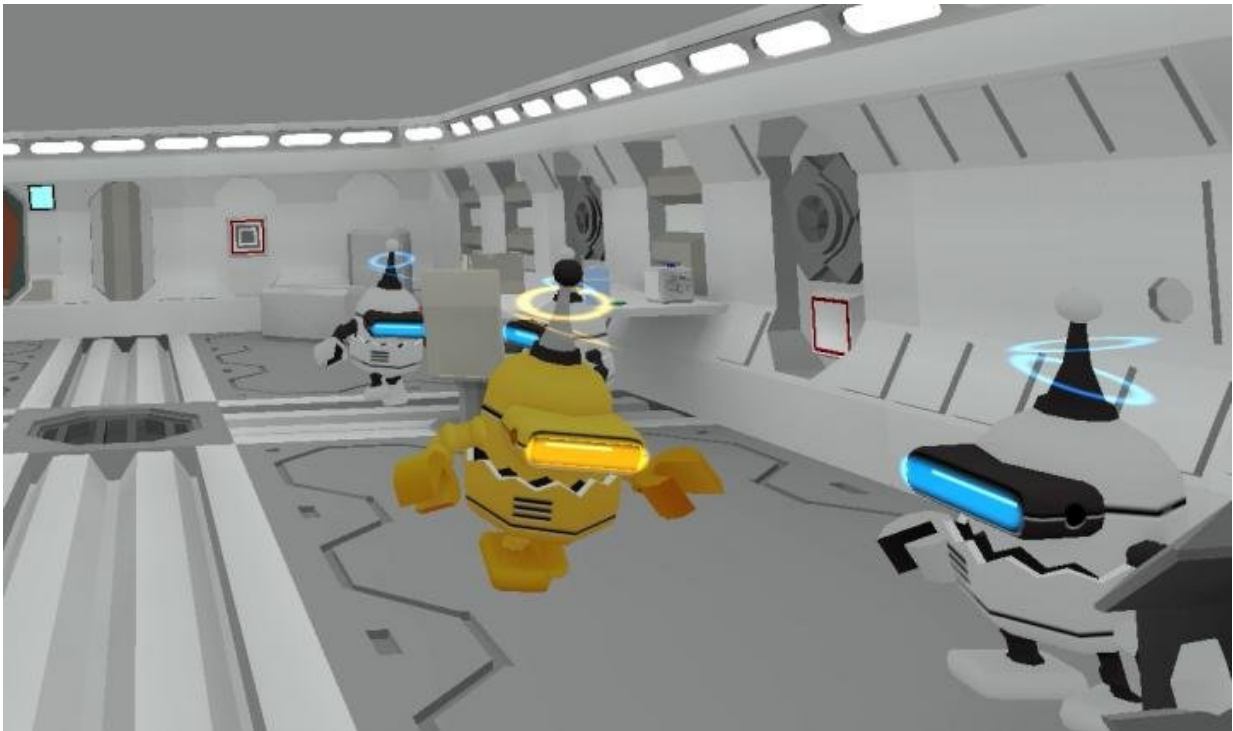


Startup Cognivive plans games as digital therapies

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Cognivive, a startup company founded by a UC Davis neuroscientist, is developing video games that act as "digital medicine" to treat children with cognitive impairments, as well as people with cognitive limitations resulting from brain injury or aging. The company will be featured at the APLU/AAU Innovation Showcase in Washington D.C. Nov. 13-14. Shown is a screen capture from "BrainPixel," one of the prototype games developed by the company. Credit: Tony Simon, UC Davis

A startup company founded by a University of California, Davis, neuroscientist is developing video games that act as "digital medicine" to treat children with cognitive impairments, as well as people with cognitive limitations resulting from brain injury or aging. The company, Cognivive, is built on research by co-founder Tony Simon, professor of psychiatry and behavioral science at UC Davis, and others showing that playing action video games can enhance players' spatiotemporal cognitive abilities.

Cognivive is one of 22 startups selected by the Association of Public and Land-grant Universities and the Association of American Universities for an [Innovation and Entrepreneurship Showcase](#) in Washington, D.C., Nov. 13 and 14. The company was also recently awarded a Small Business Innovation Research grant from the National Institute of Aging, part of the National Institutes of Health, for feasibility studies.

Children with neurodevelopment disorders and adults with brain injuries or challenges from aging experience space and time in low resolution, Simon said.

"It's like a low-resolution camera," he said. "If you have a high-resolution image, you can do a lot more with it than you can with a low-resolution image. There is a loss of information in how the world is represented."

Simon began thinking about using video games to build up cognitive abilities about 15 years ago, after seeing a conference poster on the effects of [action video games](#) on the brain. Later, he connected it with his own research on how we perceive the world and how cognitive deficits affect some people.

About five years ago, Simon began working with San Francisco-based Funonema to develop some [game](#) concepts. Ted Aronson of Funonema

is a co-founder of Cognivive.

Building capacity, not just skill

Anyone can get better at a skill by practice, Simon said. But the goal is to develop not just skills, but underlying capacity.

"If I flip a coin a hundred times, I can get good at flipping coins, but it doesn't help me play the piano," he said. Playing commercially available action games can build skills, but it doesn't necessarily build capacity.

Cognivive's games aim to boost that underlying capacity that different skills can draw on.

"We want these to be full commercial quality games that people will want to play," Simon said. "If we have a digital medicine, people have to want to take it."

So far, Cognivive has developed games for desktop computers, but virtual reality—where players wear a headset that covers their entire field of view—and augmented reality, which overlays a game over real-world surroundings, offer great potential for therapeutic games, Simon said.

More information: www.cognivive.com/

Provided by UC Davis

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