BOLT RESEARCHING HOW TO CREATE VIRTUAL COMPUTER MONITORING SYSTEM

For those who have seen Tony Stark effortlessly controlling virtual computer screens in the “Iron Man” and "Avengers" movies, you have seen Zack Bolt's vision for his research.

Bolt, a graduate student in computer science at the University of Arkansas at Little Rock, has developed a virtual computer monitor system that he hopes can eventually replace its physical counterparts.

Student researchers at UA Little Rock's Emerging Analytics Center are often tasked with discovering the possibilities of newly released virtual and augmented reality technologies. Dr. Carolina Cruz-Neira, director of the Emerging Analytics Center, challenged Bolt to come up with a unique application using the Meta 2, an augmented reality helmet.

“Dr. Cruz told me to do something interesting with the Meta 2, so I started out with the idea of a holophone and then it moved on to a holodesktop,” Bolt said. “There is a rumor in the tech world that the CEO of Meta said that the goal of this device is to replace a computer monitor, so I feel like it is a personal challenge. Only I have an edge against them since they don't let each other use other technology from other companies.”

Bolt used a mount designed and printed on a 3D printer to mount the Leap Motion, a device that detects hand movements, onto the Meta 2. People can see virtual screens through the augmented reality helmet and use simple hand gestures to perform functions like moving and resizing the screens as well as clicking and drawing.
Zachary Bolt, a graduate student in computer science and student researcher at the Emerging Analytics Center, has developed a virtual computer monitor system that he hopes can eventually replace its physical counterparts. Photo by Ben Krain/UA Little Rock Communications.

A virtual computer monitor system allows for an infinite virtual work space in which users no longer have to worry about limited monitor space, since they can open as many screens as they choose and strategically place them in easily accessible virtual space.

“The whole point of EAC is visualizing big data more easily,” Bolt said. “This technology could be used to see and interact with more data at once. Instead of tabbing through different charts, you can just turn your head to the side or above or below to see more information. You can achieve much more than just a normal sphere of office.”

The device can connect with wireless networks, which would allow multiple users to easily share and access the virtual screens, thereby making it much easier to work remotely while easily sharing information with co-workers.

“Think of the computer monitor replacement systems shown in ‘Minority Report’ or Tony Stark in the ‘Avengers’ movies,” Bolt said. “In the future, it could be like that. There are no cords. You could walk around freely, and the technology would replace the monitor completely in a freeform system.”

For those who are dreaming of handling technology with the finesse and ease of Tony Stark, Bolt warned the technology, while promising, isn’t quite ready to completely replace the desktop.

“The device is currently not accurate enough,” he said. “In the future, I would like to make the holodesktop more intuitive and easier to control. I would also want to get more headsets to have the ability to connect the device with more computers.”

Bolt’s created his demo after three months of research. He is hoping an industry partner will see his demo and fund the project for further research.

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