

Ideas on the Edge

Virtual Plurality

VIRTUAL REALITY ISN'T A SOLO EXPERIENCE ANYMORE.
UNIVERSITY OF OTTAWA RESEARCHER NICOLAS GEORGANAS
WANTS TO MAKE IT MORE SHARED THAN EVER.

It can get downright crowded in cyberspace these days. Ask any high-tech warrior hunting down aliens in the subterranean corridors of a networked on-line game.

Sharing a virtual reality environment with others, however, still takes lots of imagination. And that's

where Dr. Nicolas Georganas wants to make a difference. Georganas is director of the University of Ottawa's DISCOVER lab—a facility funded in part by the Ontario Innovation Trust—and the focus of much of his research is on creating what he calls “distributed and collaborative

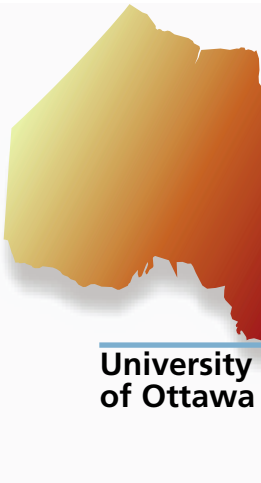


virtual environments.” In other words, simulated environments where people scattered across a city or around the world will be able to work together on a task.

Such environments will be totally immersive. Dr. Georganas anticipates that today's relatively primitive screens, joysticks and headsets will be replaced by sensory technology that can recreate any setting. “We'll have all the senses—touch, vision, hearing, even smell. If you have a coffee, I'll be able to smell it.” As a result, these true virtual reality surroundings will enable people to interact and work together in more realistic ways than ever before.

While this kind of seamless simulation is still a ways off, some of the projects coming out of the DISCOVER lab give a hint of what's ahead.

One project now in development will let surgery residents hone their skills in cataract



surgery before ever laying a hand on a real patient. The system uses a “haptic” device that provides crucial tactile feedback. “They’ll have the actual feeling that they’re grabbing a scalpel, cutting the cornea, suturing the new lens and so on,” explains Dr. Georganas.

The lab has also developed a collaborative training system for a company that provides sophisticated networking technology to customers all around the world. Using traditional VR tools like screens

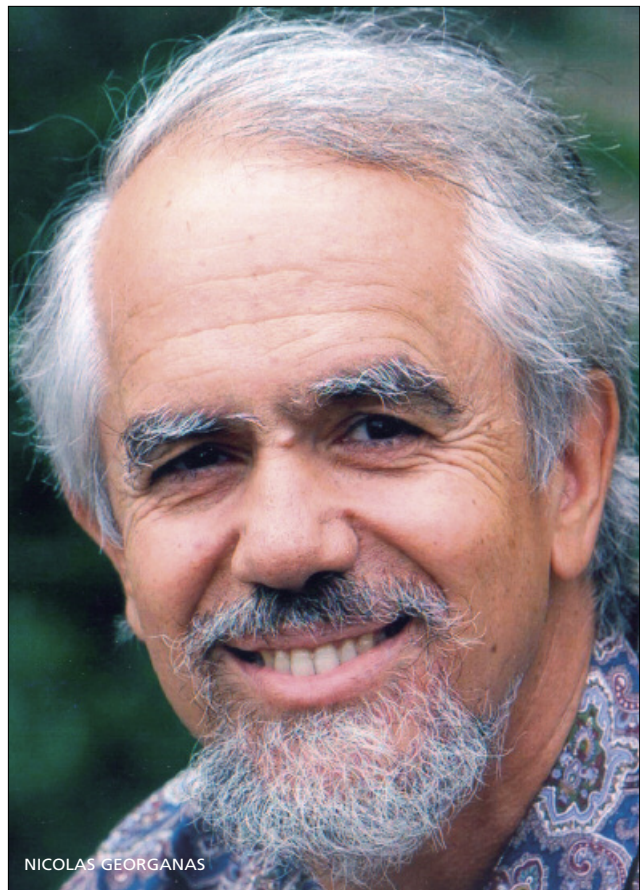


and joysticks, the system allows a trainer in Ottawa to work in real time with a trainee in China, for example,

walking through the process of replacing sensitive electronic parts.

Ultimately, the possibilities are about as limitless as the range of situations where humans need to interact. Dr. Georganas sees a role for collaborative virtual reality

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NICOLAS GEORGANAS

in interpersonal communication, e-commerce, exploration, manufacturing and in all kinds of hazardous settings like mining. The technology still has a ways to go, but he’s optimistic about the pace of development.

“These future interfaces are coming,” he says, “and they’re coming faster than we thought.”

RESEARCH THAT MATTERS
REAL-WORLD BENEFITS FOR ONTARIANS:

- revolutionary improvements in communication and training
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Infrastructure for Innovation
About the Ontario Innovation Trust

The Ontario Innovation Trust was created in 1999 by the Government of Ontario to invest in research equipment and facilities at Ontario’s universities, colleges, hospitals and other non-profit research institutions. The Trust is governed by a volunteer Board of Directors, according to the terms of a Trust agreement established by the Ontario government. A small permanent staff looks after day-to-day operations.

Since its inception, the Trust has committed almost \$843 million to strengthen Ontario’s position in the global marketplace of ideas. This represents more than a third of the \$2.44 billion in total funding that has been invested in Trust-supported projects.