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Future tourism to reap rewards of virtual South Haven project

In the future, West Michigan vacation spots will be easier to locate and more familiar thanks to a project that uses virtual 3D technology to link Google Earth to travel Web sites.

The new technology is being developed by **Dr. Dean Johnson**, a professor in the Department of Electrical and Computer Engineering (ECE), and **Sithidej Damrithamnij** (Dej – pronounced Desh), a WMU graduate who recently earned both electrical and computer MS degrees.

For the pilot study, a virtual environment was constructed for South Haven, a small Lake Michigan town. "The project involved building a virtual community on Google Earth and then interfacing the system to the major South Haven travel Web site to enable people to visualize and explore the community through links on the Web site," Johnson said. "The program is very sophisticated and very futuristic."

Johnson described the 3D virtual tourism (3dVT) system as "similar to the Google Maps 2D photographic 'photostrip street walks' that recently have been in the news, but having the additional capability of being able to embed and navigate yourself in a full 3D environment."

The project, "Economic Development of the West Michigan Lakeshore through Application of 3D Virtual Tourism," has been funded for the last two years by the US Department of Agriculture (USDA). "It was a federally funded project, but the money came through the Small Business Innovative Research (SBIR) portion of the USDA," Johnson said.
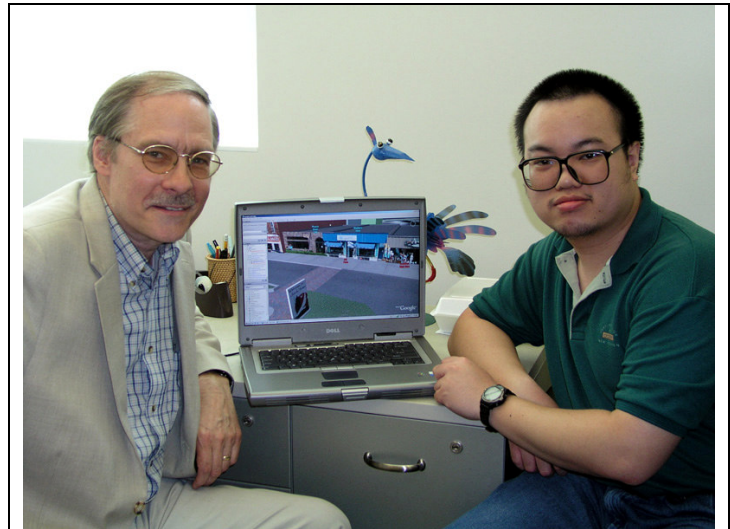
A requirement for getting the funds was that the project had to be run through a small business, so Johnson and Dej set up Webwriters LLC, a small Internet business headquartered in WMU's Walwood Hall.

Johnson credited Dej, who is from Thailand and who completed "excellent work" in Johnson's Spring 2005 ECE 6950 Virtual Reality Projects class, for the excellent 3D images. "He was the best student in my class, so I hired him," Johnson said. "He built the entire structure."

The project involves not just the usual satellite mapping on Google Earth, but also Google Earth's 3D street-level visualization capabilities. For the virtual realm, Dej created 3D hotspots of South Beach, Old Harbor, South Marina, and Downtown and Maritime Museum areas for the virtual realm.

"What's amazing about the technology is that when it is applied as we designed it, you can zoom down into the hotspots and virtually 'walk around' to further explore the area," Johnson said. "You're actually walking down the street, and the green trees that become transparent so as not to obscure the view of the surroundings."

To evaluate the project, three focus groups – two of general users and one of travel professionals – tested the

Dr. Dean Johnson (left) and **Sithidej Damrithamnij** with a display of their futuristic 3D virtual South Haven program

visualization system at Michigan Virtual University, located just outside Michigan State University. The tests were facilitated by **Dr. Don Holecek**, director of the CARRS Tourism Resource Center at MSU. Consultants on the project included **Dr. KC Chen**, associate professor in WMU's Business Information Systems department, and business consultant **John Buege**.

According to Johnson, the focus group participants enjoyed the prototype visualization system. "Some found parts of it a bit confusing because they had not had much experience with Google Earth, especially the way we were using it," he said. "The travel professionals were excited by the potential of this system to attract visitors to their Web sites as well as the number of benefits that this system might bring to small business owners in their communities."

The groups also expressed concerns about system management and the costs of updating the visualization system in a changing business environment.

Johnson is now ready to take the next step toward "a full-blown 3dVT system." Dej is presently looking for permanent employment. "We had a lot of fun," Dej said.

Johnson has been a WMU faculty member for 27 years; he earned his BS at MSU, his MS at the University of Illinois, and a Ph.D. at MSU. All his degrees are in electrical engineering. He can be reached at dean.johnson@wmich.edu

To view a demo of the pilot program, check out www.webwriters.com/southhavendemo

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