

# Virginia Tech computer science students win grand prize for 3-D competition

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(PhysOrg.com) -- A group of doctoral students in the Virginia Tech College of Engineering's computer science department, led by associate professor Doug Bowman, recently won first place in the 3-D UI Grand Prize competition at the 2010 Institute of Electrical and Electronics Engineers (IEEE) Symposium on 3-D User Interfaces.

The team, nicknamed the Fighting Gobblers, won the live demonstration category at the contest after judging by a panel of experts and by the conference attendees. The inaugural contest required teams to develop a novel 3-D user interface for a difficult virtual interaction task, in this case a shopping trip to the grocery store.

Using a virtual grocery store layout supplied by organizers, teams had to

design a system allowing users to navigate the store, pick up specific items, and place each item on a designated table in the correct orientation. The contest was launched in fall 2009.

“We worked on the system from September 2009 to March 2010, spending the first couple of months just brainstorming ideas and fleshing out different interface designs,” Bowman said.

Team members, all doctoral students within the [computer science](#) department, included Felipe Bacim, Tao Ni, Regis Kopper, and Anamary Leal.

The team decided to use off-the-shelf commodity gaming hardware, namely equipment from a [Nintendo Wii](#) system, such as a [Wii Remote](#), Nunchuk, Motion Plus sensor, [Balance Board](#), and Dance Pad.

“The challenge was in trying to use these limited controllers to perform complex 3-D interaction tasks,” Bowman said. “Most current video games support some form of 3-D interaction, but the contest required full 3-D navigation, selection, and manipulation. Our approach was to break the tasks down into simpler components that could be performed easily with the commodity hardware.”

The system was designed to “provide a complete 3-D User Interface that compares to complex virtual reality systems,” according to the team’s poster. The team’s final design provided high levels of usability and performance - with the Balance Board used for slow, precise navigation, the dance pad for rapid navigation, and the hand-held devices for selection and placement of items.

Provided by Virginia Polytechnic Institute and State University

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