USF intelligent scarecrow travels world

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(Tampa, Fla. June 1, 2006) - An intelligent scarecrow, nicknamed J.J. - designed by four USF College of Engineering computer science and engineering students to protect both the investment of aqua-farmers and the lives of birds that may prey upon their fish - does not, unlike the scarecrow of Oz fame, have a "head all full of stuffing." J.J. has a head all full of cameras and other hi-tech computer components that, for less than $500, will keep birds away from fish farm ponds without harming fish-seeking birds.

The smart scarecrow, disguised as a USF football player, was born as just one of the several novel projects during this semester's Senior Project (CIS 4930) in USF professor of computer science Ken Christensen's class, but J.J.'s fame has taken him "around the world" in media coverage as the initial media release spread the word that scarecrow finally had a brain. (Going to Google News, and using "intelligent scarecrow" as a search term will provide a list of J.J.'s media hops around the world.)

Recently filmed by a crew from Discovery TV, Canada, (http://www.exn.ca/dailyplanet/view.asp?date=5/24/2006) with two appearances on local TV (http://www.tampabays10.com/news/local/afternoon/article.aspx?storyid=30525) and written about in newspapers and on websites throughout the U.S., Europe, Australia, the United Kingdom, the Middle East and Asia (including India and China), J.J.'s next challenge is to win the 2006 Microsoft Windows Embedded Student ChallengeE World Finals on Microsoft's campus in Redmond, WA. The competition will be held June 23-24. Thirty student teams from around the world (China-14; India- 4; U.S.-5; Romania -3; Mexico -2; Brazil -1; Australia-1) will participate.

"This project is an example of what USF engineering students can do," said Christensen. "They successfully generated requirements, produced a design and implemented it, then tested the implementation within strict time and cost constraints. They've done a great job."

As one of only five U.S. teams selected, the USF team – Albert Ng; Francisco Blanquicet; Jimal Ramsamooj; Scott Werner and USF professor and team faculty advisor, Christensen - will journey with J.J. to the Microsoft competition confident that their entry will more than live up to the Microsoft Challenge that requires students to use Windows CE to "design a computer-based system that solves a real-world problem focused on preserving, protecting and enhancing the environment." First prize is $8,000.

"We are honored to be finalists," said Ramsamooj.

Their project is all about saving protected bird species and also saving fish farmers dollars.

"Aquaculture, also known as fish farming, is a vital part of the world's fish production," said Christensen. "The outdoor farms are susceptible to predator birds. The students' intelligent scarecrow is designed to benefit farmers while protecting predator birds - many of which are protected species - from harm."

How does J.J., the intelligent scarecrow, do his scary thing? With computer programmed intruder identifiers, such as image processors, noisemakers and water cannons, J.J. can make an intelligent

assessment of an intruder by color, programmed in ahead of his work shift. Fish farmers working around the ponds can wear orange vests to be identified as “friendlies.”

“J.J. is not just another motion-detector,” said student Albert Ng. “He is capable of intelligent detection, deterrence and can also record the events.”

According to Ng, the scarecrow will detect motion and then use its cameras, equipped with image and color sensors, to discriminate between intruders and non-intruders using programmed color recognition. He is “armed” with a speaker system that blasts up to 120 decibels of gunshot sound and also hits approaching predator birds with high speed but harmless streams of water. Not one to keep secrets, the scarecrow then emails or calls the user’s cell phone to let them know that he has been on the job and accomplished a hi-tech “scare.”

The experience, from drawing board to live tests, has provided a valuable experience for Blanquicet.

“It has been great fun seeing how our concept – first written on a piece of paper – after a lot of hard work has been successful,” said Blanquicet. “We’ve had a lot of media attention already and really look forward to the Microsoft competition.”

The USF computer science engineering wizards designed and tested J.J. in the lab before successfully testing and improving its function in real-time at the Wimauma, Fla. fish farm of John Skidmore, who was happy to accommodate the USF students who found him in the Yellow Pages and “cold called” him with an interesting proposal.

“We lose three to five percent of our stock annually to predator birds,” said Skidmore, owner of “Golden Pond Tropicals,” an eight acre, 97 pond fish farm. “The scarecrow has real potential.”

The computer science engineering team also suggested that a similar system could be extended beyond fish farming to protect orchards and vineyards where farmers experience similar problems with deer, black bears and other pests or predator animals.

“Image processing has great potential for pest detection,” concluded Christensen.

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