

Carnegie Mellon humanoids to provide commentary at RoboCup 2006

June 12 2006

Carnegie Mellon University is sending two small bipedal robots to the RoboCup 2006 World Championship June 14–18 in Bremen, Germany, to provide color commentary for robot soccer matches -- a first for humanoid robots.

The walking robots are perfectly capable of kicking a ball, but in this new application they will instead be moving their heads and bodies to track the soccer ball with their electronic eyes. During the championships, they will provide commentary for matches between teams of four-legged robots that were developed by Sony Corporation.

The silver, 2 1/2-foot-tall robots, named Ami and Sango, will receive wireless input from the Game Controller, the same system that communicates the referee's calls to the four-legged robot players.

The sober Sango and emotional Ami will explain rules from a robot's point of view, identify which team is advancing the ball and dissect fouls for spectators using synthesized voices as well as video monitors that display their commentary in both English and German text.

And though they can't match the vigor of Telemundo's Andrés Cantor and his trademark "GO-O-O-O-O-O-O-O-O-O-O-O-O-O-O-OALLLLL!" they will celebrate by pumping their arms or making other gestures when either team scores.

Manuela Veloso, the Herbert Simon Professor of Computer Science and

head of Carnegie Mellon's RoboCup teams, said creating a pair of robot commentators -- entertaining as Ami and Sango might be -- is a challenging technical task that, like robot soccer, demands teamwork.

"From a research point of view, we are trying to solve the observation problem," Veloso said. "We need to map the input from their vision sensors, combined with the wireless information from the Game Controller, into a recognition of the events that are occurring. And then that awareness of events has to be translated into language."

Neither robot can see the entire playing field, so Ami and Sango will share what they see as play proceeds. They also need to coordinate what they say, so they don't repeat or contradict each other.

"They don't talk at the same time," Veloso said. "But if one is explaining a rule and a nice goal is made, the other has the ability to interrupt." Finding ways for robots to work together is a major thrust of Veloso's core research laboratory, CORAL, where robots Cooperate, Observe, Reason, Act and Learn.

The commentary itself requires a degree of intelligence. A goal when the score is tied is much more significant, for instance, than a goal by a team already leading a match 4-0.

"It's a difficult problem because of all these dynamics," Veloso said. "And of course we don't know what's going to be happening in the game."

The robots were developed to expect and respond to a large range of situations. But the team has also included a system called Puppet Master, which allows humans to intervene and prompt Ami and Sango to do or say something if they are not able to autonomously perceive an important event.

The Carnegie Mellon researchers have developed new movements and behaviors for the small bipedal robots, which were developed by Sony, and are exploring possible applications for the watching, walking, talking robots.

On the Net: RoboCup 2006: www.robocup2006.org

Source: Carnegie Mellon University

Citation: Carnegie Mellon humanoids to provide commentary at RoboCup 2006 (2006, June 12) retrieved 24 May 2024 from <https://phys.org/news/2006-06-carnegie-mellon-humanoids-commentary-robocup.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.