In search of machines that play at being human

October 14 2009

Researchers at Carlos III University (Spain) have taken part in an international contest whose objective is to improve artificial intelligence utilized in virtual worlds. The challenge for the participants was to develop a program capable of acting like a person in a video game.

The second edition of this contest, known as the [BotPrize](#), had its beginning in a test developed in 1950 by AlanTuring who thought that real [artificial intelligence](#) is achieved when a human cannot tell if his or her unseen interlocutor is another person or a machine. In this case, the participants had to adapt the test to video games in order to generate the most human-like behavior possible in the artificial characters in the [virtual world](#). The objective was to develop software capable of controlling a character in the videogame called *Unreal Tournament 2004*

in which designated judges would not be able to tell whether whoever is behind the enemy in questions was a person or a computer.

This year 15 teams participated in the final of the contest, which took place in Milan, Italy from countries such as Brazil, Canada, The United States, Italy, Japan, The United Kingdom and Spain. Among the representatives from our country was Raúl Arrabales, professor in the Information Technology Department at Carlos III University of Madrid. "As my research is focused on Artificial Intelligence, it seemed to me that the Turing Test adapted to video games was a good domain in which to empirically test our advances," he explains.

In this second edition of the BotPrize, as in the first one and in the original Turing Test, none of the computer programs or bots presented was able to deceive 80% of the judges in the contest. "In our case, we didn't have enough time to program a good bot, since I am still in the process of migrating the control architecture that I use in real robots to the bots in the Unreal Tournament 2004, so we didn't place among the first five, but I will try again next year with a more advanced bot which implements the abilities of prediction of the opponent."

The complexity of human behavior

The researcher at Carlos III University stresses the complexity involved in generating behavior similar to that of humans in any environment, either in robotics or in videogame simulation , because it becomes necessary to combine different cognitive capacities. "We look first at how the brain works, we try to understand it and later we try to imitate it in the machine," summarizes Arrabales. "The problem," he continues, "is that we know a lot about the brain, but only at a relatively high level, the function that each concrete area of the brain carries out and how it is connected and is related to other brain areas." This impedes reproducing artificial neuron networks copying the human ones in enough detail,

which normally obliges artificial intelligence engineers to work at high description levels, as in artificial cognitive architectures, with which there is an attempt at imitation of the highest human capabilities.

In any case, all of the finalists in the contest were able to convince at least one of the judges of their humanness. In the final, each one of the five judges started a game against two players: one person and onecomputer program. After about 15 minutes of play, the judge had to identify his or her opponents. The video game experts thought that one of the greatest successes of online games lies in the fact that players prefer to play against real players over videogame artificial intelligence.

Source: Universidad Carlos III de Madrid

Citation: In search of machines that play at being human (2009, October 14) retrieved 20 March 2024 from https://phys.org/news/2009-10-machines-human.html