Artificial intelligence -- child's play!

February 2 2009

Scientists have developed a computer game called "Gorge" - designed to help children understand artificial intelligence through play, and even to change it. It can also improve the children's social interaction skills.

Intelligent robots come to life - a popular theme of science fiction movies. The creatures break away from their makers, develop feelings, become superior to humans, and ultimately attempt to conquer the world. The phenomen of artificial intelligence, AI for short, has fascinated mankind since before the time of Frankenstein.

Researchers at the Fraunhofer Institute for Digital Media Technology IDMT in Ilmenau now plan to teach even children what AI is all about. "To do this, we have developed a very simple computer game called 'Gorge'," says IDMT head of department Prof. Klaus Peter Jantke. "Gorge enables children to find out through play how AI works, because they can influence it themselves." The rules of Gorge are simple: Teams of pieces have to move around a board and reach a destination, rather like in 'Ludo'. The die decides where a piece has to move to. Jostling is allowed - so if a piece lands on a square already occupied by another piece, it is pushed onto the next unoccupied square. The paths are crisscrossed by gorges - hence the name of the game. A piece can only cross a gorge if helped by another piece. Then this piece can decide whether to help the other piece get out again or leave it to perish in the gorge - in other words, it can adopt the role of a hero or a villain.

"The great thing about this game is that not only people can play against each other. You can also play against the computer, or have one

computer play against another," says Jantke. "That's even more exciting because the person can set how 'good' or 'bad' the machine is. "For example, the player can define a rule that says: "If you find someone in a gorge, you must always pull them out." Or: "Never go into a gorge." In this way, children can decide for themselves whether they prefer to play against a good or a bad opponent. And they can observe what sort of behavioral patterns the artificially intelligent machine develops, whether its actions are more aggressive or more defensive.

What happens when several "baddies" play against each other? Who wins if all the players are good? Do the "goodies" always beat the "baddies"? Children can make interesting observations about AI and thus learn a lot about it. The researchers will be presenting a prototype of "Gorge" at CeBIT in Hannover on March 3 to 8.

Provided by Fraunhofer-Gesellschaft