

Robot hand wins at rock, paper, scissors every time (w/ Video)

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(Phys.org) -- What do you call a robot hand that wins at rock, paper, scissors every time? Some would say a cheater, but others more in the know would call it the Janken robot, built by Japanese researchers from the University of Tokyo. They've built a robot hand that when combined with a camera and tracking software is able to beat people at their own game every time it plays. But only because it cheats.

When two people resort to using rock, paper, scissors to resolve a conundrum, they first ball their hands into a fist, then pump two times before throwing down their choice: rock (a fist), paper (open flat hand) or scissors (two fingers simulating a pair of scissors). Because there is no one hand formation that can always beat the other two, the game is



considered one of chance, though many insist there is a definite psychological twist as both participants attempt to guess which formation the other is going to use, and then make their decisions based on that.

With robots though, there's no trying to psyche someone out; instead it's, as always, about brute force, or in this case, speed. The Janken (the Japanese name for rock, paper, scissors) robot has a camera attached to it that feeds it information about what is going on with the hand of the opponent. Software running on the attached computer is able to discern which part of the picture is a human hand and then orders the tracking part of the system to follow its movements. Thus, the robot hand closely watches the human hand as it does its fist pumping, and then as it goes for the throwdown. As soon as it recognizes which gesture the hand is forming, its software calculates a winning gesture and orders the hand to throw it down, all so quickly that to us mere humans, it appears as if the robot is able to guess which gesture the human is going to use, every single time.

When two people play, if one tries to hold back on their throwdown to figure out what gesture the other is going to play before throwing down their own, anyone watching can see what's going on and the person is labeled a cheat. When a robot does it though, is it really cheating? Because cheating is a human construct after all, and implies a degree of deception. The <u>robot hand</u> isn't trying to deceive anyone, it's just doing what it's been programmed to do by human beings, which suggests that it's still people who are doing the cheating after all, albeit in a much more advanced way.

Thus a robotics experiment meant to advance the science by mastering a simple game played around the world, has evolved into a philosophical debate regarding not just the nature of man, but how robots might fit into a future where both will likely be expected to coexist in a peaceful



and productive way.

More information: <u>www.k2.t.u-tokyo.ac.jp/fusion/Janken/index-</u> <u>e.html</u>

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