The Rise of Artificial Intelligence and the End of Code

By Cade Metz 05.19.16

What the AI Behind AlphaGo Can Teach Us About Being Human

Aja Huang dips his hand into a wooden bowl of polished black stones and, without looking, thumbs one between his middle and index finger. Peering through wire-rim glasses, he places the black stone on the board, in a mostly empty zone, just below and to the left of a single white stone. In Go parlance it is a "shoulder hit," in from the side, far away from most of the game's other action.

Across the table, Lee Sedol, the best Go player of the past decade, freezes. He looks at the 37 stones fanned out across the board, then stands up and leaves.

In the commentary room, about 50 feet away, Michael Redmond is watching the game via closed-circuit. Redmond, the only Western Go player to reach the rank of nine dan, the game's uppermost designation, literally does a double take. He is just as shocked as Lee. "I don't really know if it's a good move or a bad move," Redmond says to the nearly 2 million people following the game online.

"I thought it was a mistake," says the other English-language commentator, Chris Garlock, vice president of communications for the American Go Association.

A few minutes later, Lee walks back into the match room. He sits down but doesn't touch his bowl of white stones. A minute goes by, then another—15 in all, a significant chunk of the initial two hours the players are allowed each game in the tournament. Finally, Lee plucks out a stone and places it on the board, just above the black one Huang played.

Huang's move was just the 37th in the game, but Lee never recovers from the blow. Four hours and 20 minutes later, he resigns, defeated.

But Huang was not the true winner of this game of Go. He was only following orders— conveyed on a flatscreen monitor to his left, which was connected to a nearby control room here at the Four Seasons Hotel in Seoul and itself networked into hundreds of computers inside Google data centers scattered throughout the world. Huang was just the hands; the mind behind the game was an [artificial intelligence named AlphaGo](#), and it

was beating one of the best players of perhaps the most complex game ever devised by humans.

In the same room, another Go expert watches—three-time European champion Fan Hui. At first, Move 37 confuses him too. But he has a history with AlphaGo. He is, more than any other human being, its sparring partner. Over five months, Fan played hundreds of games with the machine, allowing its creators to see where it faltered. Fan lost time and again, but he's come to understand AlphaGo—as much as anyone ever could. That shoulder hit, Fan thinks, it wasn't a human move. But after 10 seconds of pondering it, he understands. "So beautiful," he says. "So beautiful."

In this best-of-five series, AlphaGo now led Lee—and, by proxy, humanity—two games to none. Move 37 showed that AlphaGo wasn't just regurgitating years of programming or cranking through a brute-force predictive algorithm. It was the moment AlphaGo proved it *understands*, or at least appears to mimic understanding in a way that is indistinguishable from the real thing. From where Lee sat, AlphaGo displayed what Go players might describe as intuition, the ability to play a beautiful game not just like a person but in a way no person could.

But don't weep for Lee Sedol in his defeat, or for humanity. Lee isn't a martyr, and Move 37 wasn't the moment where the machines began their inexorable rise to power over our lesser minds. Quite the opposite: Move 37 was the moment machines and humanity finally began to evolve together.