Go players react to computer defeat

Experts think that world champion Lee Sedol may still beat the AI software in a March contest.

Elizabeth Gibney

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South Korean students play Go, an ancient Chinese board game popular across Asia.

For decades, the ancient game of Go has stood out as the one board game that computers couldn't crack. Played by tens of millions of people across Asia, its complexity and subtlety meant that Go's top human players reigned supreme against the advance of artificial intelligence (AI).

Now, for the first time, a computer has beaten a human Go professional without the advantage of a handicap. AlphaGo, a program developed by Google's London-based company DeepMind, bested European champion Fan Hui in five games out of five.

Nature asked Fan what it's like to be beaten by a machine, and took predictions from other Go and AI aficionados about who will win when AlphaGo faces its ultimate challenge: playing against Lee Sedol, one of the game's greatest players, in March.

Fan Hui
European Go champion

"In China, Go is not just a game. It is also a mirror on life. We say if you have a problem with your game, maybe you also have a problem in life.

Losing was very hard. Before I played with AlphaGo, I thought I would win. After the first game I changed my strategy and fought more, but I lost. The problem is humans sometimes make very big mistakes, because we are human. Sometimes we are tired, sometimes we so want to win the game, we have this pressure. The programme is not like this. It's very strong and stable, it seems like a wall. For me this is a big difference. I know AlphaGo is a computer, but if no one told me, maybe I would think the player was a little strange, but a very strong player, a real person.

Of course, when I lost the game I was not happy, but all professionals will lose many games. So I lose, I study the game, and maybe I change my game. I think it's a good thing for the future."
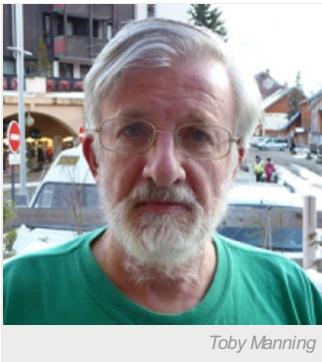
Toby Manning
Treasurer, British Go Association, and referee of Fan versus AlphaGo

"Go players were aware that the game is one of the great unsolved problems in AI, so I think people were expecting that computers would reach professional human level, but the feeling was it was going to take another 10 years or so. In this match, I was expecting Fan Hui to win.

The thing that struck me, playing through the games you couldn't tell who was the human and who was the computer. With a lot of software you find the computer makes a lot of sensible moves and suddenly loses the plot. But here, you couldn't tell which was which.

The one thing that was not human was the way it managed its time. Fan Hui took longer over his moves than AlphaGo. And AlphaGo seemed to be not as aggressive as a human might have been. It would play very calmly rather than start a fight by invading territory or attacking a group of stones.

I think the main reaction from the Go community will be, as indeed happened after IBM computer Deep Blue achieved grandmaster status in chess, is that people want to get hold of the software and use it in their own games to work out where they went wrong."

Hajin Lee
Secretary general of the International Go Federation

"When I first heard about this plan for a computer to challenge the top professional, Lee Sedol, I was really shocked. I thought this challenger must have no idea how strong the top player was, but actually it was I who had no idea how strong the computer was. Now I am very excited.

Who will win? I don't know. Lee Sedol himself doubts that the computer is as strong [as he is]. But personally I had a chance to hear more about AlphaGo, and then I was just amazed how strong it was. I also personally know how strong Lee Sedol is, so I would say each has a 50% chance.

I think Go still has a lot to offer, and I don't think the fact that computer AI can be stronger than humans diminishes the game at any level. I think people will accept that computer technology has advanced and find a way to use that to use that to the advantage."

Jonathan Schaeffer
Computer scientist at the University of Alberta, Edmonton, Canada, and designer of Chinook, the program that solved draughts (checkers) in 2007

"This is not yet a Deep Blue moment [when the computer beat world champion Garry Kasparov at chess in 1997]. The real achievement will be when the program plays a player in the true top echelon. Deep Blue started regularly beating grandmasters in 1989, but the end result was eight years later. What I see from these numbers is that the gap between where AlphaGo is and where the top humans are has shrunk enormously, and it's quite possible that with a bit more work and improvements, and more computing

power, within a year or two they could do it.

[In the March match], no offence to the AlphaGo team, but I would put my money on the human. Think of AlphaGo as a child prodigy. All of a sudden it has learned to play really good Go, very quickly. But it doesn't have a lot of experience. What we saw in chess and checkers is that experience counts for a lot."

Demis Hassabis: Google DeepMind

Demis Hassabis

Co-founder of DeepMind, the firm that created AlphaGo

"AlphaGo is now going beyond — hopefully, eventually — what even the best humans in this area can do. It's quite an amazing feeling to see what new things it's going to invent, within the constraints of the game of Go. I guess we feel a lot of affinity with the system we've built, especially because of the way it's been built — it has learned, we've trained it in some sense, and it's playing in quite a human-like style. And it's different from a program you've hand-crafted where you know all the nuances of what you can do: here it has picked up things for itself, so it's amazing to see the kind of capabilities it has learned."

David Silver: Google DeepMind

David Silver

DeepMind computer scientist

"I haven't put any money on AlphaGo winning, but I do think we have a lot of reputation riding on this bet. So let's just say we'll be very disappointed if we lose the match in March. But you never know, anything is possible. Humans inevitably have a lot of tricks up their sleeve that we're not able to train against."

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