



# Man's best friend: Will AI help human investors, or replace them?

Industry leaders say artificial intelligence is a tool, but others see a future where the robots are in control



A Sony robotic dog 'aibo' is displayed at the company's headquarters in Tokyo, Japan, on Friday, July 27, 2018. Getty Images

## By Tom Teodorczuk

British mathematician Alan Turing developed the Turing test, a milestone in the development of artificial intelligence (AI), in 1950. The test administrator asks the subject, who is hidden from view, a series of questions intended to reveal whether they are human or a computer. According to Turing, a computer that could pass his test, that is, pass as human, is intelligent.

Hedge funds using AI in their trading strategies are confronting a different test of computers' potential to display intelligence: can a machine trading against a human make more money?

Most quantitative hedge fund managers want to dispel fears that robots are going to take traders' jobs. They think current AI-driven strategies, unlike discretionary funds that are based on human insight and conventional research methodology, combine the skills of man and machine. But Turing's intellectual heirs at The Alan Turing Institute, headquartered in the British Library, believe the rise of the machines is not far off.

"Some of the discretionary managers will go out of business," said Dr Adrian Weller, programme director for AI at the institute. "Over time the algorithms are getting better. Humans are generally not progressing as quickly as the algorithms."

The more immediate concern for many in finance is the threat of automation, which is expected to allow companies to do more than they do today, but with fewer staff. Opimas, the financial services company, forecasts 90,000 jobs in asset management — almost a third of the worldwide total — will disappear by 2025 because of AI.

Sandy Rattray, chief investment officer of Man Group, the world's largest publicly traded hedge fund, does not yet see machines replacing humans. "There is absolutely a continuing role for discretionary managers; there are plenty of tasks that machines struggle with," he said. "But I think we will automate some of the more mundane tasks that they were doing, particularly trading and execution."

Grant Fuller, chief executive of Irithmics, the AI data start-up whose clients include the London Stock Exchange, said: "It is like a rescuer who has a dog that goes looking for bodies after an earthquake. The rescuer and the dog [AI and humans] are not competing. They are working together to find the body."

If the long-term consequences of AI remain unclear, undoubtedly hedge funds now deploy computer models in greater numbers. According to BarclayHedge, the data provider, 58% of hedge funds say they use AI or machine learning in their investment processes.

Hedge funds most commonly use AI to process enormous quantities of data. It is used to derive meaning from market and other available data to help forecast share price movements and set up trades. The most sought-after data are those other hedge funds do not have.

One hedge fund investor, speaking on condition of anonymity, said, “Data is the new oil, thanks to the AI rush.” AI is already processing data and trades cheaper, faster and more efficiently, he added.

He cited Barrick Gold, the Canadian mining company, buying its rival Randgold Resources for \$6.5bn as a recent example of an AI-driven trade. “AI machines calculated investors were buying shares in Randgold and Barrick prior to the sale, suggesting they were sensitive to imminent positive news,” he said, though adding the machines detected no hard evidence of insider trading.

Ray Dalio’s Bridgewater is one of the hedge funds that have developed AI units. Steve Cohen’s Point72 is developing both data machine-learning enterprises and cognitive-computing processes based on human input, a so-called quantamental strategy, according to a person familiar with the situation.

Man Group, the \$114.1bn asset manager, has also embraced alternative intelligence using data-driven machines to execute trades. Machine learning-based signals were added to quant programs run by AHL, Man’s computer-driven trading outfit, and Numeric, its quant fund. Its discretionary trading unit GLG now has a separate machine-learning team.

“In 2014 we made a bet that quant fund management specifically, and tech generally, was key to the future of asset management,” said Luke Ellis, chief executive of Man Group.

However, even with the mix of human direction and machine execution, investors have yet to see evidence of AI leading to spectacular outperformance.

The EurekaHedge AI Hedge Fund index, an equally weighted index of 14 constituent funds, is down 6% in 2018. One of the highest-profile hedge funds, Sentient Investment Management, closed last September after less than two years.

Many suspect AI hedge funds, which claim to use cutting-edge tech for their trading, are actually deploying decades-old statistical models. Such is the secrecy that surrounds quant funds' trading operations that, from the outside, it is hard even to discern when AI is being used at all.

“In many cases, from my discussions with the machine-learning guys, they don't really know how the model works, which is the thing that gives you serious pause,” said Ian Haas, senior vice-president of Neuberger Berman, the investment manager, at the Gaining The Edge hedge fund conference in New York in early November. Paul Zummo, chief executive of JPMorgan Alternative Asset Management, estimated at the same conference that 95% of machine-learning technology in hedge funds does not generate any meaningful value.

And suspicions swirl that quant funds crowd into the same investment positions since machines are unable to discern the motivations behind a trade. This can exacerbate “flash crashes”, such as the US trillion-dollar stock market meltdown in May 2010, caused by an errant trading algorithm. Several figures in the hedge fund industry who preferred to remain anonymous said in February that AI machines were caught off guard by what they described as non-repeating data patterns, resulting in heavy losses for quant funds.

One trader, speaking on condition of anonymity, said: “Every time there is a high-profile premiere of a film starring Dwayne Johnson, the stock of Johnson & Johnson goes up because machines can't tell the difference between the corporation and The Rock.”

Some in the industry remain sceptical that AI-driven trading will eclipse discretionary management.

“You know how much AUM [assets under management] CTAs [commodity trading advisers, computer-driven futures hedge funds] do in total?” said a hedge fund manager talking on condition of anonymity. “\$360bn. That's chickens\*\*\*! Fully automated trading will never happen.”

Robert Frey, a former managing director at legendary quant hedge fund Renaissance Technologies who helped build their Medallion fund, which has assembled an average return of 40% a year since the late 1980s, now runs FQS Capital Partners, the fund-of-funds business.

Even an AI veteran such as Frey has wider concerns relating to the transformative market capabilities of machine learning. “AI is not going solve the inherent myopia that unfortunately

seems to occur within finance,” he said. “The problem is not ‘AI or not AI’. The problem is that our memories are too short term.”

Man Group’s Rattray said the exponential increase in the speed and scale of data-processing enables Man to better apply a brake on losses. “We believe it [the machine] can be particularly good at working out when a sell-off has gone too far,” he said. “You can feed it a large amount of data and it is able to tell us about every market for all of the specified time.”

Asked about FQS’s factor model, Frey said it “uses machine-learning techniques to tease out what the common factors are that drive returns and assets”. He said while much of AI is too artificial and not intelligent, machine-learning technology has revolutionised his hedge fund in fund selection and risk monitoring.

“It is possible now to capture some of the non-linear effects [trading patterns that machines, and not humans, can detect] that were impractical... it has really made a difference in the way we manage money.”

But if AI is supplying the soundtrack for the trading of tomorrow, where are the rock star AI hedge fund managers?

One hedge fund manager, speaking on condition of anonymity, said AI hedge fund rock stars do exist. “They are out there toiling quietly in laboratories in California and Chicago. The media profile of AI hedge fund managers, compared with discretionary hedge fund managers, is rather like the difference between Theresa May and Boris Johnson.”

Others think it is in not hedge fund managers’ interests to view machines as the star. “People that run hedge funds still want to run the money — it’s their brain, it’s what they do,” said Oliver Fochler, chief executive of Stone Mountain Capital, the alternative investment adviser. “They are too proud of themselves! If you are a fund manager, do you want to read an article about yourself in the media, or do you want to read it is the AI trade that made what you did great?”

Most quant funds are keen to stress they view AI as offering minimal deviation from their human-originated trading strategies. Christopher Reeve, director of investment solutions at Aspect Capital, one of the UK’s largest computer-driven hedge funds, said of his company’s trend-following machine strategy: “It does what a good trader should do. It systemises the right way to trade, which is to cut your losses and not get attached to them or hide them in a drawer and hope they come good later. It reacts to the evidence.”

“A few years ago the suspicion about algorithms and machines was a lot higher than it is now,” said Gary Collier, chief technology officer of Man Group Alpha Technology. “There seems to be a lot of acceptance that algorithms help make better investment decisions than humans alone.”

Man Group might be increasingly quant driven in its alpha generation, trade execution and portfolio construction but Ellis stressed the company still lives up to its name. He cited a Man Group employee recently stumbling across computer code from the 1950s that helped create a new algorithm.

“The consistent factor running through what you can do in quant fund management is that the secret sauce is people,” he said.

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