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Astra makes machine learning bet with Benevolent AI deal



[Madeleine Armstrong](#)



Astrazeneca has made another push into artificial intelligence, but admits that it will be some time before it knows whether the technology has helped its drug discovery efforts.

Today's tie-up between Astrazeneca and Benevolent AI is another example of a big pharma jumping on the machine learning bandwagon, in this case to try to improve its drug discovery processes.

Some industry watchers are cynical about the potential of artificial intelligence, and even Astra admits that the jury is still out. But the company maintains that this is an area it has to be involved in, otherwise it risks falling behind its competitors.

"There's a lot of hyperbole around machine learning and what it can do to transform drug discovery," Mene Pangalos, head of Astra's innovative medicines division, tells *Vantage*. "But I think it's something worth us investing in, because if it is useful it could be transformational."

Still, it will be a long while before this will be proven either way, he concedes: "The proof of the pudding will be if we can deliver proof-of-concept data or launch a medicine. And that's obviously some years away."

New targets

The aim of the deal with Benevolent is to give Astra new insights into the biology of diseases, initially chronic kidney disease (CKD) and idiopathic pulmonary fibrosis (IPF), so it can discover targets or drug candidates that it might not have otherwise found.

Key to this effort will be Benevolent's capabilities in natural language processing (NLP): the way machines analyse human language and pull out relevant information. In this case, the companies will scour publicly available sources including scientific meetings, journals and patents to look for links between the diseases of interest and specific genes or proteins.

This will generate an evolving and adapting dataset that will be updated as new findings become available, making this resource more powerful, Mr Pangalos explains.

Astra is already sitting on a lot of data in CKD and IPF, which is one reason it chose to look first at these disorders, another being that they are complex and poorly understood. But the company will expand into all

disease areas if the machine learning approach proves its worth, Mr Pangalos says.

Early hints that the technology is doing what it is supposed to could include the company finding a genetically linked target that it would not otherwise have looked for, he adds.

No black box

As for why Astra chose Benevolent above the other many AI specialists, Mr Pangalos cites the group's "excellent" NLP skills, an area in which Astra does not have its own capabilities.

Another important factor was that Benevolent was willing to work with Astra, rather than just asking the big pharma to trust a "black box" algorithm with no input or understanding of how - or if - it worked.

"There were companies that wanted us to just trust their capability, and for me that wasn't acceptable because that won't strengthen our own ability to do this. I didn't want to become dependent on any one person or group - I wanted the expertise internally to judge whether this is good or not," Mr Pangalos says, but refuses to point the finger at any AI company in particular.

However, one player, IBM Watson Health, could provide a cautionary tale on the dangers of putting too much faith in machine learning. The company has struggled with various issues, most recently [reportedly stopping sales](#) of Watson for Drug Discovery, used in preclinical drug development.

The group's director of global life sciences, Christina Busmalis, told *Vantage* last week that Watson was still supporting the drug discovery product. When pressed on whether this meant that the company would not sell Watson for Drug Discovery to new customers, she replied: "We're supporting our existing clients, and it's a case-by-case basis of how we go to market."

She also admitted that the company was "investing more heavily into other areas, specifically clinical development".

Astra did meet Watson when it was looking for a machine learning partner, along with many other AI players, Mr Pangalos says.

For now he will not give any financial details, but says the Benevolent deal represents "exceptionally good value for money" for Astra.

Of course, this will ultimately depend on the collaboration producing results in the long term. "We still don't know how useful this will be," Mr Pangalos admits. "But we'll never get there if we don't work on it, so it's important we're trying it."

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