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How far should AI replace human sense?

ANTHONY WONG   THE AUSTRALIAN   12:00AM September 27, 2016

In my previous column, I discussed how algorithms are increasingly being used to analyse information, define or predict outcomes and to aid in machine learning and artificial intelligence. From financial advice to making medical diagnoses, computers are playing a greater role.

But how far should we take it? IBM's Watson supercomputer might have proven its superiority at playing Jeopardy, but does that mean it's ready to take on challenges which call not just for a sifting of facts, but for more subjective qualities like judgment, compassion and human values? And what is the role for humans in a world increasingly run by AI?

The use of algorithms by Chicago Police to generate a "heat list" of people considered likely to be involved in future violent crimes made headlines in the US in 2014, raising concerns about the potential for discrimination, false positives and the risk of creating self-fulfilling prophecies.

With algorithms, how do we ensure basic human rights are protected and who decides how much information should be made public?

I spoke recently to a data scientist working in the health field who said he could use algorithms to predict who among a group of patients was likely to die within the next month.

This raises all sorts of ethical and moral dilemmas. Should he tell them? What if the algorithm is wrong? If you were in that group, would you want to know? Could he change the result, and if so, is he morally obligated to do so? What is the ethical position here?

In future medical environments where robots provide much of the care, how do we want them to respond to this kind of knowledge? And how much knowledge should they have access to anyway?

As the internet of things sees more and more devices being connected and providing data about consumer behaviour, we could potentially see instances where hospitals track the dietary and exercise behaviour of individuals and groups in order to predict their probability of needing care. While such data might indeed be useful to doctors providing care for their patients, many might consider it an intrusion on their privacy.

Another area where AI is having a significant impact is in the practice of law, where algorithms are being used to instantly search through thousands of cases to identify legal precedents for use in court cases and even to make judgments.

In the US, the Missouri Sentencing Commission has developed an Automated Sentencing Application which reportedly calculates the cost of incarceration for the defendant against the likelihood they will re-offend based on their criminal history and behavioural and demographic factors to determine a sentence.

Former Australian High Court judge and human rights advocate Michael Kirby suggests that while AI offers consistency, that is only one attribute of justice, which must also consider qualities such as mercy, recognition that humans are fallible and the ability to differentiate an exceptional case.

"It is possible that artificial intelligence, as it develops, may be able to factor in exceptional considerations such as these. However, so long as it is ultimately based on mathematical algorithms, it seems unlikely to me that these exceptional human characteristics could be allowed for," Mr Kirby said.

At last year's Global Conference on Cyberspace at The Hague, a paper called the Ethics of Algorithms raised the need for regulation of algorithms by governments, particularly in the areas such as finance, with its increasing use of automated high-speed trading systems and their potentially destabilising effect on financial markets.

We use algorithmists to audit algorithms to improve transparency and accountability. These professionals will have a multifaceted role to play.

Not only will they need expertise in computer science, maths and statistics, but they will also need an understanding of the social and ethical implications of different robotic decisions.

Our next challenge will be how to develop and train these professionals for a world in sore need of their services.

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