

BRUCE
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MR MXF THINKS... DO I CARE IF A MACHINE THINKS FOR ME?

CLASS: HOW MACHINE LEARNING MIGHT AFFECT MEDIA

Why has AI suddenly becoming interesting?

I have a curious relationship with technology. I've been doing it all my life and I see topics come and go over the years. This is the 3rd time around that I've seen Artificial Intelligence become trendy and this time, I think it will stick. There are 4 things that are different this time around and they are (in alphabetical order) Amazon, IBM, Google, Microsoft. All of those companies have had AI research programs running for years, but the big change now is that there is enough ubiquitous compute resource in the form of the cloud to make it commercially viable to build products around the platforms.

How does AI actually work? Firstly, I'm going to stop using the term AI which is a catch-all phrase that implies some sort of sentience to the computer. All experts agree that we're a long way from that. Instead, I'm going to use the term Machine Learning (ML) which more accurately reflects where we are. Typically, an ML engine consists of some software that is able to extract information from a large data set and then correlate that data against a set of known outcomes. An example from years ago is a large data set of camouflaged tanks in forests from which information such as edges, contrast, and geometric pattern were correlated against the simple outcome tank or no tank. The computation required was immense and the standard methodology of using 80% of your data to train the model and 20% of the data to test the model was used.

Training in this context is basically the adjusting of the parameters of the model until the ML engine gets the right result for all of the training data. Once you've done this you can remember the parameters and see if it works for the test data. In the tank example, the results on the test data were pretty good and it seemed like the system worked. In real life, however, the system was virtually useless. Later scrutiny discovered that in the training data, all of the photos of tanks were on cloudy days and all the photos of no tanks were on sunny days. In effect the system had been trained to detect that the sun was shining. >>

Photo by Salvatore P, courtesy of pexels.com

>> Why you should be sceptical of ML

Given this scenario, you may dismiss this as a case of old technology and badly understood training methodologies. Unfortunately, we still have this problem today. If you're not white Caucasian, then you might wonder why facial recognition software doesn't work for you as well as it does for your white Caucasian friends. If you're applying for a job in a big organisation, then you should be rightly worried about the training sets used to identify the perfect resume.

Why you should be optimistic about ML

So, in 2018 we still suffer from the issue of not really knowing what we have trained the ML engine to do, but we do know that there are certain applications that continue to get better and will have an impact on our life as media professionals.

Voice command and synthesis. I believe will radically change the way in which we interact with media equipment. In live TV we train humans and give them instructions by voice. It's will not be long until software applications join that merry gang.

Auto translation and voice synthesis. This gets better every day and is good enough for many applications.

If you haven't played with Amazon's Polly, then go here and click: <https://aws.amazon.com/polly/>. Bruce's Shorts will soon become Polly aware. I look forward to the responses from my international followers!

Image, pattern and emotion recognition. As a tennis fan, I have to say that the highlights shots being selected by IBM's Watson for <https://wimbledon.com> are pretty amazing. I know that there is additional human curation, but the speed and accuracy empower the humans to create packages that would otherwise not get made because there is not enough time. Just remember that every time you search for an image on google, there is an ML algorithm curating content for you.

Will the machines take over?

AI and ML will dramatically change the way we do our media jobs. In that same way that the synthesiser did not replace live musicians, I don't think that machines will replace humans in the media world. I think that the real creatives who understand the technology will make amazing content to keep my aging brain happy. Visit <https://google.github.io/creatism/> and <https://jukedeck.com/> to see if you agree.

Ciao, Bruce. ■

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