Humans Can Still Teach Machines A Thing Or Two

I do believe we’re about to see many more success stories in predictive analytics and big data going forward. We can point to instances like the recent success of AlphaGo, a program developed by Google, which was the first of its kind to beat one of the best human players in the world in the board game Go.

Products like these are beacons to show us what’s possible. We know that companies like Google, Facebook, IBM and more are pouring a lot of money into deploying these technologies on a day-to-day basis. As time goes on, the applicability of them is raising very rapidly.

To give you a sense of the pace of adoption I’m talking about, learning-type tools used to be utilized by 1 or 2 teams inside Google in 2013. Now you have over 2000 teams using these kinds of tools.

There is a tremendous push in open sourcing this technology and the question that inevitably comes up is: Why are companies investing in these technologies so much yet still giving away a lot of it in open source?

What I find in academia is that if a person takes a class on IBM’s Watson, they’re more likely to use Watson and then go to work at IBM using Watson. Therefore, the mindshare war going on between various tools from Facebook and Google is the new Ground Zero in determining the winners and losers in the next tidal wave of deep learning as it permeates the rest of our economy.

Is there an implication for talent when you have a coming wave like this of predictive enterprise?

Yes. We’ll need very good teachers. Here’s what I mean.

Current programming as we know it, in which we teach a computer how to do something step-by-step, is going to be around for quite a while more. But there’s a new wave of programming that is going to emerge whereby it’s more of a functional programming where you will tell the computer what you want done and the computer will know how to do it. Better yet, instead of telling it what to do, you’ll teach it what to do.
The giant promise of deep learning is that these are learning systems to be taught rather than programmed. This will likely call for a different kind of skill set than what we're used to. It may be that the most phenomenal teachers will be useful in a new kind of environment – one in which the very term of “teacher” is redefined in ways we never imagined: Not merely human-to-human but human-to-machine as well.

Now, I understand there’s a fear that once we teach a machine how to do something, it won't need us humans anymore. But I don't subscribe to that theory. I believe that, at least for the foreseeable future, machines will still need our involvement and can't operate completely independent of us.

Rather, the newest computing tools coming up will be seen as another extension and enhancement of our capabilities.

Case in point: I mentioned AlphaGo at the beginning of this post and how it beat a human at the most expert level for the first time in a particular game. That occurred in October of last year. Well, since that master player lost, he has been playing against AlphaGo and found his game has dramatically improved due to his interaction with a machine that has exposed him to new ideas and strategies.

That's the human side but computers can benefit from interaction a great deal too. Even when it’s machine vs. machine.

The critical factor to success for a machine like AlphaGo was not just in doing millions upon millions of moves on its own so it could learn the best path to take – in actuality, AlphaGo found true progress came from playing another system while a 3rd system “watched and learned.”

In other words, to reach a higher level of performance, a single machine still needs to interface and collaborate with the likes of humans (or at least with other machines).

So let’s not write off our importance to machines just yet. If they truly want to get smarter, they may need us as much as we need them.
What's your view of it all? Do you foresee having exceptional human teachers in your industry to help machines learn better? If so, how far off do you think this kind of future is for many of us? I'm curious on your thoughts.

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