EXperimental Learning

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Big Data and Social Analytics certificate course

MODULE 2 UNIT 1
Video 1 Transcript

MIT BDA Module 2 Unit 1 Video 1 Transcript

Speaker key

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AP: Let's talk about the social physics way of understanding humans. So, the key insight is that people's behavior is not a function of what goes on in their brain so much as it is what the people around them do. We learn mostly from other people. That's what we call culture. So, we see people doing something. It looks like a good idea. We copy it. It's not something that came from inside your head. It came from copying other people and the consequence of that is ideas flow from person to person to person. Social learning, copying other people, talking to other people, causes ideas to flow around in society or in a company.

And once we begin realizing this we have a different way of approaching understanding what people want and what they're likely to do. For instance if we wanted to understand what sort of apps somebody would do we could go and say, well, they're this old and earn this much money and things like that, but sometimes what we can do is look what their buddies do. And if we see their buddies all using some particular app on their smartphone it's a sure bet that they will too. In fact in comparing the, sort of, demographic approach, individual features versus the social physics social features we find that often there's a five times better accuracy in predicting what people will do by paying attention to the social context than you could get from paying attention to individual features. That right there is a real revolution in analysis.

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Figuring out what the group is doing in order to know the individual is much more powerful. For instance as a concrete thing let's look at that, predicting apps on your phone. So, imagine for the moment that you had an app on somebody's phone or that you were the telco and you could see things like where the person went, who they called and what apps were after it. Then you could look at some of their social networks. You could look at who's around, their proximity network. You could look at who they call. You could look at who they have listed in their contact list as friends. You could look at when they go some place who also goes to that, not necessarily at the same time. Those are different types of social networks, but it turns out that if I'm going to predict your behavior, each of those social networks is important because each of them is an opportunity for you to learn and you're influenced by each of those social networks.

If I have apps on a lot of people's phones I can say how many people in your proximity network have that app, how many people in your friendship network have that app, how many people in your co-location network have that app. And if I take that information all together in a fairly simple way I can then predict what apps you'll use with about five times the accuracy of demographic data, a huge increase in accuracy.

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HY: Social network data has proven to predict behavior with up to five times more accuracy than traditional individual demographic data. Which of the following networks do you think has been the most influential on the apps that you download?

a. Proximity network – who you're around
b. Call network – who you call
c. Friendship network – who you're friends with
d. Co-location network – who you're with

The proximity network is usually the most influential with call network the most powerful influence. Co-location network is usually somewhat influential, and (surprisingly) the friendship network is often the least influential.

AP: That's the simple way to do it. You can imagine doing that at scale if you have telco data, if you have Wi-Fi data, if you have access to apps that are very very common. Even if you have bankcard data you can build these proximity, co-location networks and be able to ask, who are each of these people exposed to? What social learning will they likely have? And on the basis of that you can divide the world up into what we call tribes, people who learn from each other. Doesn't mean they're friends. Friends in fact are not very influential on your decisions. It's the people you spend time with who aren't necessarily even people you know. You just go to the same places. And by knowing what those people do you can now predict buying behavior, health behavior and others.

For instance in a large European city we looked at these co-location proximity networks and what we found was they were three times better at predicting general buying behavior than all of the sociodemographic information we could collect. Age, gender, marital status, what they typically buy, where they work, political views, on and on and on, didn't even touch this social physics approach of looking at what are you exposed to in face-to-face situations.