Stanford eCorner

Qualitative in Contrast to Quantitative

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Palantir Co-Founder Stephen Cohen articulates how to approach a deeper understanding between knowledge and data that is quantitative versus qualitative in nature. Recognizing the depth and subtlety of the qualitative domain, in contrast to what is precisely definable, says Cohen, provides scientists and entrepreneurs with a new and valuable perspective on solving problems.

Transcript

So take the entire domain of human economic activity. Take all the things we do, all the things we want to do, all the things that make that up. And now draw a line that divides on one hand the precisely definable and on the other hand everything that's not quite that all of the related phenomenon that for whatever reason can't quite be precisely pinned down. So we can probably precisely pin down, yes or no, am I hungry? But we can't precisely pin down how hungry am I, what does that feel like? We can assign a number, we can make an approximation, but that is a phenomenon is at best exactly that an approximation. The fundamental fact of it, is it exists in something that's much less precise but just as real and just as tangible. I think that line that separates that precisely definable from that which is not this is basically the line where algorithms can - let me backtrack for a second. This may just be obvious from like a technology entrepreneur's standpoint but I'll say it verbatim. I really believe that with all the advances we've had in computing, computers will do all things computers can possibly do. So when it comes to - if you accept the kind of the extrapolation there, then the next question naturally becomes, what can computers do? If the answer is everything then we can expect computers to be coming and taking away a lot of what we do day to day. But I strongly believe it's just not.

Actually there's a lot that computers really can't do. And there's - also - I'm very interested in the reasons why quantum computing - I hope we don't have any administrators in here - but I spent last quarter sneaking into the history corner Tuesdays and Thursdays auditing the quantum computing course that Stanford just started teaching. Because it's deeply fascinating stuff and potentially in quantum computing there are some answers to why classical computational algorithms might not be able to get certain human reasoning tasks done. But nonetheless, recognizing the depth and the subtlety of the qualitative domain, and recognizing it as disjoint and separate from the quantitative domain, this lets you start seeing problems a little differently. There's a lot of interest in Salesforce, other CRM products, a lot of web analytics, and these are all essentially domains where we are collecting - we're building a quantitative universe. I mean the space of all big data is one where we build a quantitative universe and then we study it. And one approach to this is to say let's get as much data as possible and then let's develop the most sophisticated algorithm as possible for finding patterns in the sea of quantitative data. But I ultimately don't believe that will be terribly successful. I think the much more important questions are let's study the human aspects of this, the qualitative aspects of the problem. What are we trying to get done? What's actually happening? What are the subtle aspects of this process that when we actually clarify, then we can actually learn that's where we want to collect the data, that's what we want to analyze, that's what we want to figure out.

And through the study of the qualitative phenomenon that dovetails right next to this quantitative phenomenon in the actual universe, through this we can then optimize how we use our computers to actually do what we want them to do. And this place, this is where I think we're going to see a lot of technology companies in the 21st century. I think this is much closer to the actual 21st century big data analysis problem, at least much more so then getting more and more fancy algorithms to kind of do

the same problems we've already seen.