A need for stronger guardrails

Transcript

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I come from a faraway place intellectually, not physically, but intellectually. I started off as a theoretical particle physicist and then gradually moved over to the real world. And, so in this journey to the real world, there was a spot where, we were actually looking at petabytes of data collected per second, distilled down to terabytes of data on tape, which was later distilled down to gigabytes to megabytes to one number, which, characterized the mass of a particle, maybe.

So, in this entire distilling down, there was a very structured way of approaching it. The reason why the petabytes were reduced to terabytes was because the rest was junk. So, 1 in ,1000 data points were kept, and then the distillation continued. And this is something that we've … that particle physics has been used for decades – this distilling down and bringing signal out of noise.

Now, the way I like to characterize data and life sciences is really moving into the big data regime. Now, we literally have petabytes of genomic data, and not all of it is important. At the end of the day, one mutation is what it takes in some cases, in some cases, but of course a lot more complexity.

So how do you actually take all of that data and extract the signal from it? That is one big question. Of course. That's the insights part of it. But the other part of it is the risk is that are you actually analyzing the signals, properly? Are you sensitive to the noise in the data, etc.? Are you bringing out wrong insights?

And the difference between doing this in a particle physics setting is that you might get the mass of a particle wrong. So what? I mean, try again. In the life sciences setting, this has a really huge implication. If even one person dies because you've made a wrong decision, that matters. And it's not that it's never happened before. It happens. But then the impact of an incorrect decision is very large in the life sciences, and hence the guardrails that we put into data aggregation, the guardrails we put into decision-making, need to be so much more stronger.