Podcast transcript

Make an Impact with Data Analytics

Interviewer: Today, we're talking with Jonathan Dunne. He's a Principal Data Scientist in the Sustainability Software Group at IBM. Jonathan, how did you get into the field of data analytics and sustainability?

Jonathan: That's an interesting question. I'd say kind of by accident is probably my initial sort of thought on that. I started off when I was in IBM as a developer and then after a period of about five years, I then graduated towards a career path in systems and performance engineering. And that was really related to looking at how you know large cloud based systems and on-premise systems work. And of course when you're analyzing you know why systems fail you're looking at large volumes of data. And I learned when I was analyzing data that there were probably things about the data that I didn't really know. Other than counting faults or counting the occurrence or getting the mean or standard deviation of some observation, didn't really know that much else around what types of measurements that I should be employing as part of my data analysis.

So, really it was from there like getting access to data that I kind of realized that I need to do something a bit different than just continuing on what I'm doing. And, then it was really a case of from that systems and performance role to actually graduating more towards the data science career which is what I've been doing for the last like 10 or 12 years now. But, I would see the systems and performance as really a stepping stone to that data science career.

Interviewer: OK great. When did you start getting into the sustainability aspect of it.

Jonathan: Yes, the sustainability, I would say pretty much, I would say in the last like five years. So, I actually moved role to what now is the sustainability software group. And, that attracted me because as a tenant on planet earth, we're far more acutely aware of the impact that humans have on the planet in terms of climate change and kind of whatnot. So, it was almost like it was part of my nature to seek out roles that would allow me to take all of the knowledge that I had as a data scientist up to now and try to apply them into solutions that would lend itself towards sustainability solutions whether it was a case of looking at wind farm data, whether it was a case of looking at power usage within data centers, didn't really matter you know as long as I was involved in being part of that kind of solution that was you know that was really what I want to be involved in. So, I'd say for the past four or five years, I've been involved in the sustainability part of IBM.

Interviewer: Can you share with us the biggest discovery you made in your early work with sustainability and data analytics?

Jonathan: One of the areas that I was kind of most happy about was there's was an issue with hard drive failures in a data center many years ago. And, one of the things that I wanted to figure out was what was the hard drive model type that was actually causing these problems because what was happening was that when hard drives were failed they were replaced. And, of course when they need to be replaced, these products needed to be shipped from a manufacturer to the data center. That all takes up carbon to basically transport these hard drives. And if they're failing en masse and in regular intervals, then there was a requirement for you know more carbon footprints to be spent actually

replacing these assets, never mind the people that would be called in to actually have to physically replace these assets because it couldn't be done through automation. So, long story short, I actually figured out you know there was a particular set of hard drive types that were causal on failure and by basically preventing that model type of actually being installed in the future led to an 85% drop in hard drive failures in the data center. Then, it basically stops the need for those journeys to be made to replace the hard drives. So, that has an indirect effect on sustainability.

Interviewer: Jonathan what excites you most about your work in data analytics?

Jonathan: I think it's really the pursuit of the unknown, or the pursuit of the difficult problems that need to be solved. And, they won't solve themselves, so we need curious people to actually solve the problem. We don't necessarily need only people that have vast sort of knowledge in a particular area, I mean that would certainly help, but I think one of the first things that you need to do is to be kind of curious. So, I think you know it's what drives me to solve problems is my curious nature in that we've got to solve many many problems around sustainability in terms of power usage, getting off fossil fuels, making sure that renewables are as optimal as possible, vegetation management. There's just a very broad sort of spectrum of problem spaces and use cases where one could be involved in. And, I think, me being curious allows me to basically work in these problem and solution spaces, and that really drives me because I want to be that person that helps solve the kind of problems that you can look back on and that was where I made a difference.

Interviewer: What advice do you have for people that want to get into data analytics and perhaps sustainability?

Jonathan: It doesn't really matter whether you're a kind of a math geek speak or a stats wiz or any of these sort of terms that you hear. When I was a kid in school you know, I wasn't that great with math. Now, I've got a math PhD. So, it doesn't really matter at a particular point in time whether you think or don't think I'm ready for this, or I may not have the ability. The core thing that you really need is to be curious right. So, if you're curious about how systems work, why problems are actually happening, then that's really the core asset that you need. Everything else can be learned. Things like learning algebra, learning probability theory, learning calculus, that all can be learned. But, what's very hard to learn, or to teach people is to be curious. It's almost like it's something that you're born. You actually can help curate it and kind of mentor people in it. But, one of the things that I would say to younger people looking to get on a path is reach inside yourself and tap into your own curiousness and ask yourself well what is it about the problems that we have today. And if we think about sustainability as a core problem because it may not be a problem for people now, but in 20 years time you know we could be facing even more challenges, and they may not be surmountable. So, it's about trying to knuckle down and try to look at these problems today. So, the more people that we can engage in being curious around how do we fix the status quo because we know the status quo isn't really working up to a point. And we need to evangelize more for sustainable solutions. So, how do we get people into the technology spaces and careers that are going to help solve these problems for basically me when I'm retired and sitting in a chair wondering why I didn't solve a particular problem. I've got all these other people out there actually solving these problems.

Interviewer: Thank you for sharing your ideas with us. We've been talking today with Jonathan Dunne, Principal Scientist in the Software Group at IBM.