

Predictive Analytics Reimagined - Part 2

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BRADLEY HOWARD (BH): Hello, you're listening to tech reimagined. I'm Bradley Howard, and in part one we had a lively discussion about data and everything you can do with it in a business. Today, I'm going to be asking my guests, Keith McCormick, machine learning consultant and LinkedIn learning author, and Dan Pelos, lead data consultant at Endava, about how they got into a career in data in the first place.

Let's start with you, Keith. Tell us about your career.

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KEITH McCORMICK (KM): Well, when I was an undergrad I studied computer science and I didn't take a ton of statistics classes. I took a couple because I had to, and, to be candid, I wasn't particularly fond of it. But then I was on a project where I was analysing data and applying statistics, most of which I then taught myself because I hadn't, frankly, been paying careful attention in the stats classes.

But once I started actually using it I became quite fond of it. I thought this is really interesting so where am I going to take this?

And I contemplated PhD work, not in statistics itself but an applied field, and of course one thing leads to the other because PhD work takes so long, and I was really just in the early stages, I physically relocated to a different part of the United States, where I still live, and started to take some classes and just get settled. This is in my late 20s.

And I got a chance to teach some statistics software classes for SPSS, and it was really just a way to pay for the bills to make a little bit of extra money on the side. But I discovered before long that it gave me everything that I thought I was trying to seek by getting the PhD, which was a career spent teaching and researching.

So I just really loved teaching these statistic software classes, and I'm about five hours drive from Washington DC, and Washington DC is overflowing with statistics and statisticians, so that's where I would typically travel but I was travelling all over the country and, eventually, all over the world. And for about 10 years I was, although I was an independent contractor, I was essentially a full-time statistics software trainer.

But that started to move into machine learning because the same company, SPSS, acquired a smaller company that made a predictive analytics platform. And it was still fairly new to do machine learning on laptops those days, it was starting to be democratised I guess is the term that people would use now.

And that turned into consulting, and now all these years later I'm doing very similar work, it's just that I tend to work with the folks that run the teams and help them build and hire and train their teams, more than building the model itself, and it's been that way for the last several years, so that's been the focus of my consulting is more on the team leadership side.

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BH: And now you're a LinkedIn learning author, what does that mean, then, how do you become one?

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KM: Oh, well that's just one of those things that often happens in a career where you kind of get this surprise. So in 2013, at that point I'd been training for so long that I was pretty well known in the SPSS community, and I got together all my friends that were also experts in this predictive analytics platform, and we worked together on a book. I mean this was truly a cast of thousands, this was five authors, five technical reviewers, other people were involved, and it was a niche, you know, book, but it was popular.

And that got me started in book authoring. And if you look at most LinkedIn learning authors they're established in the field somehow through something. So they first approached me in 2016, because a book author friend of mine was approached and the course topic they needed wasn't something that she was especially excited about but she thought that it was good fit for me.

And I really, really enjoyed the experience. You know, there's probably a lot of folks that have seen these courses or kind of seen the little play button on the LinkedIn platform, but I don't know if everybody has a good sense of what it's actually like. There's a studio outside of Santa Barbara, in this little beach town called Carpinteria, and just a few minutes north of Santa Barbara is wine country. So it is not a burden to have to be flown out to Santa Barbara, it's not a rough gig at all.

And you're in this soundproof booth and there's a producer and there's sound folks and there's camera crews, and if the course is video, which some of them are, you know there's a green room and make-up and everything, it's really elaborate. And I'd never experienced anything quite like it but it was a very positive experience, and they really do make you look and sound good.

So once I got a chance to do one I decided that I would do as many as they would let me do, so I'm up to 13 now and I've really found it very rewarding professionally, and I just love the whole process.

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BH: Excellent. And do you get viewership stats of how many people are taking the course?

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KM: I guess it's something like a quarter million views. Now they've switched over to viewers and I find the new system a little bit more confusing, exactly what it is, translating from one to the other, but it's been really rewarding in that sense, too. I've never had, obviously, that big an audience in my classroom teaching, even over the course of many years. I mean I probably had as many at 10,000 in the classroom, and actually that's probably a pretty good guess, but even if you've got groups of 100 people it would take forever to get up to a quarter million.

So it's been rewarding in that sense, too, and it's given me a broader audience than I've ever had before, which has really been kind of exciting. It's giving me my option of projects in a way that perhaps I didn't have five or 10 years ago.

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BH: Excellent. And Dan, how about yourself, how's your career been?

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DAN PELOS (DP): So my career path was very different to Keith's. So I was working as a busy gigging musician, living at home with my parents, and I probably don't think my parents probably, necessarily thought that a full-time musician would probably pay all of the bills.

So I remember, once, I was sat in the lounge and my mum came in with a, with the local newspaper, and in there was a job advert for a junior computer programmer, no experience needed, this was kind of very early noughties. So she kind of pushed me into going for it just a little bit just seeing how it was going, it was on the doorstep from where we lived at the time.

So I went for it, managed to get the job. And the first day that I started the job a guy started the same day, he'd just walked out of a three year computer science degree. So I was like, well, how on earth am I going to come, be comparable to this guy who's got a full degree and I didn't have one.

I've kind of pretty much self-learnt the guitar and other instruments throughout my life so I thought I'm sure I can self-learn a career. And that's what I did. I started really kind of looking into understanding the job, the role of the business, data in general, and, fortunately, the guy who started the same day as me, he was really good, helped, walked me through some of the basics. I was working with a good team at the time and I was just really keen and eager to learn and to keep my head above the water, really.

And that's kind of the way I've been kind of focused throughout the past 20 years of working with data, it's been a pretty fast career growth ever since. I've made some fairly risky decisions along the way, moved out of my comfort zones, so I've done some career coaching and I've talked about this a number of times and, you know, saying to people, look, I've done fairly well from not really having a degree or anything to being fortunate in where I am at the moment. And just a lot of hard work along the way.

You know, it's been really good fun, like I said right at the start, I've worked across multiple industries so I've got a good grasp of how different industries work, and that's mainly through fortunate career decisions, because I didn't necessarily know I was going into that when I was applying for jobs.

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BH: So what different types of companies have you worked for?

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DP: So I worked for software vendors, so companies that build data products, and I've kind of been consultancy for them, so going out and trying to sell the different products through data, to understanding the business needs and requirements, so I've been business analyst. And I've worked through for marketing solutions software companies as well, so where they're very much the vendors, similar to how Endava operate and work for a number of different organisations and do work on their behalf through data.

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BH: And during the hours nine to five you're a data star, and then between five and nine you're a rock star, which probably works well in terms of day and night time, but how do you manage both of those?

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DP: So a number of people have asked this same question, and really I don't know any different. It's just something I've always done. And, you know, I very much see performing on stage in front of hundreds and hundreds of people, it may sound silly but it's the way I release any kind of stress, just give off, you know, just it's my release, getting out and singing in front of people.

And I actually looked into it as well over the years, I did some research just out for my own interest, about how my brain, so a musician's brain, can be applied in the sort of work that I'm doing at the moment, how I can use that to my advantage. And musicians appear to have highly connected their left and right hemispheres of the brain due to the way they listen and process music, so breaking down musical instruments and understanding what's going on.

And some of those interlinked brain tasks can also be good for like planning, strategising, attention to detail, and some memory functions as well. So although I didn't necessarily know any of this when I was learning guitar at six years old, I do strongly believe that there's a good overlap in what I do as a musician and what I do in the office.

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BH: You talked about how you didn't go to university, and before that Keith talked about how he did a PhD, do you think that young people entering the workplace now can manage to get a job without a degree, get in a job in computing?

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DP: So, again, I have talked to ... I've done a number of small talks around career coaching, and that obviously pops up quite a lot, you know, do I need to go and study, and, obviously, yes you do. But I haven't and I've learnt a lot through experience, so my career has been built up and brought in around through views that I have experienced. So obviously things are different now than they were kind of 15-20 years ago. But I've never struggled with not going to university to being able to do my day job.

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KM: I just want to jump in and clarify that I actually never did pursue the PhD cause I enjoyed the software training gig so much that I just kept on doing that. So I'm a bit unusual among the predictive types in that I don't have a PhD or a masters. At least I thought that was the case but I think it's partly a generation thing, you know, Dan, as you were saying, things are starting to change now.

There just simply weren't degrees in what we do until five or ten years ago. So a lot of us that have been doing this for more than that period of time somewhat were off the hook, and I think the data science community is still trying to sort out how important it is to have specifically a data science masters and so on. I think we're still figuring that out because those programmes are so new. But I've been, you know, I did get the Bachelors, but I did not get an advanced degree, and at the time I thought that was going to restrict me, but now this many years later I don't worry about it anymore, obviously.

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BH: And, Keith, have you had mentors along the way, or any pieces of advice that have stuck with you?

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KM: You know, it's funny, I have a ton of books, I guess I think of myself as a reader but truth be told I'm the kind of person who sometimes reads 10% of a book and then like moves onto another book, I tend to skip around a lot.

But the mentors that I always think of are often people that I've never actually met but have influenced me through the things that they've written. So on the statistic side there's a guy named Jacob Cohen. He wrote an article called *Things I Have Learned So Far* that absolutely influenced the way that I think about statistics. And another name, and I know these are probably, you know, obscure names, but I encourage people to seek out these articles because they're short articles but they really were kind of transformative because they, you know how it is, sometimes you will encounter the right thing at the right moment in your career.

Leo Breiman is the guy who invented CART. And I never met him and I didn't give his whole personal history that much thought until I was pretty well established in my career. But he wrote an article called *The Two Cultures*, that was about the differences between machine learning and statistics. And those two articles, the Cohen article and the Breiman article, I must revisit them like every year, I don't know, they've just had a huge influence on me. So it's kind of odd perhaps that I feel as though they've been my mentors in many sense, and more than folks that I've actually known in life, but they've had a powerful influence on me.

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BH: And do you provide your experience as a mentor to other people?

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KM: Oh yes, I think that's what I love about teaching, you know, so I do some teaching for UC Irvine, remotely, as you can imagine, I've been doing it for about the last four or five years. And they interviewed me and asked me what I enjoyed about teaching, and there are probably going to people cringe when I say this, but I said in the interview that the reason I like doing the teaching was the grading, which of course is a tedious thing, nobody really enjoys grading. So it's not so much that it's fun but it's rewarding. And the reason it's rewarding is I get to catch data scientists, very often, in the first year of their career, in fact, in many cases, they've got IT roles and they're transitioning. But it's through the homework that I see the mistakes that they're inclined to make, and that has really helped me in my consulting because you just don't have that many hours with somebody on a consulting gig, if there's a problem I just intervene and, you know, and fix it, or we talk about it and we fix it. There's certainly some mentoring there but not the kind of mentoring that you encounter when you've got a dozen people going through a, you know, a remote course over a period of 10 or 12 weeks.

So just watching students interact with silly little practise examples, that's been a powerful way to empower my consulting and, you know, obviously, I'm mentoring them along the way, or at least I certainly hope I am.

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BH: And how about you, Dan, have you had mentors?

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DP: Yes, so similar to Keith, and it's interesting what Keith said about, you know, having mentors or advice through people you've never met. And, obviously, me being so fascinated about the music is obviously lyrics. So lyrics, I can call out numerous of lyrics that have helped influence and push me along the way.

But if I talk to peers who I've worked with throughout my career, certainly going back to that first job that I ever had, I was working in my local town, which is only a small town, and my manager at the time, she came up to me and she said, you know, Dan, you really need to move on with your career and, you know, there's a big, wide world out there, you could do a lot more than you're doing here at the moment.

And she was saying like, you know, there's job opportunities 30, 40 miles away, and I was thinking, yes, but I live here and I'm in this little town, little community that I'm quite happy with. And she kind of pushed me into making that bold move, which I guess, for me, I found is like the first risk of my career. But it paid off, it went well, and from then, you know, that's never been an issue. I now commute two hours each way into the office, when we're in the office, and so that advice has obviously stuck with me.

I've had other people that certainly have influenced me along the way. A guy who was CEO of a company I was at, and his philosophy was very much, you know, if you ever stop learning it's time to move on. And at the moment, the way our world is with data and technology, and it's moving so fast, and there's new technology coming out all the time. And working with Endava where we're actually using so many different of the latest technology, we can, you know, I'm never going to stop learning. It's fantastic and I love and I embrace it and I grow with it, and I want to learn it and I want to stay up to date with all the modern technology, what's going on, and the way data is evolving rapidly.

I guess the final person who's really helped me along with my career was a guy who, again, saw potential in my, and he moved me across with him from two businesses that he ran, which was obviously, very rewarding and privileged by.

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BH: Lovely. And do you read any business books or listen to any podcasts, Dan?

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DP: If I'm being truthful, no not really. I obviously do, so mentioning the Flipboard app earlier, so I like to stay on top of the news in technology, in business, and in data. But if I'm being completely honest I would rather pick up a guitar and focus on that, and just, you know, enjoy the moment of being involved with the guitar and running through a series of sequencing and learning songs and stuff, rather than, so for me that's more rewarding and as part of my down time rather than sitting reading books.

Podcasts I do listen to but, again, they're normally music focused, so Desert Island Discs being one of my favourites, but I also like listening to people that I've never even heard of before, and like hearing about their journey in music, and business.

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BH: And, Keith, you mentioned about listening to Audible every day, when do you get time to listen to Audible, and what are you listening to at the moment?

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KM: Well, I wish I could say that I listen to Audible while I'm preparing to run, you know, a half marathon or something, that would not be truthful. I'm not quite sure when it started as a habit but I know that part of it is I have a lot of friends and I bet you all do, too, that climb into bed and stare

into the light of their phone at night. And then they wake up when the alarm goes off and the first thing they do is grab their phone and like stare into the phone.

So I just decided a while back that was not a way to prepare my brain for sleep. So what I usually do is listen to the audio book at night, and then in the morning, often, I've left it on all night and slept through it, and then I have to struggle to figure out, you know, where I'd left off. But that's why it's an everyday thing, it's usually in the evening, turn the lights off because I don't need the lights on for the audio book, and it lets me get a good half hour or hour of reading in. And then if I wake up at some point, or wake up earlier if I beat the alarm, then I'll usually turn it on in the morning. It's become enough of a habit that it influences the business books that I'll do.

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BH: And what are you listening to at the moment?

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KM: Well, you get the credit or the blame for, you know, for this one. I think you know the book that I'm talking about. So we had a conversation, you know, Bradley, and you mentioned *Radical Uncertainty*, and I said, oh, you mean the book by David Hand, who's a famous British statistician. And I was confused. David Hand's book is not *Radical Uncertainty*, it's *The Improbability Principle*. So through that mistake I'm reading both at the same time, which is typical of me.

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BH: Just to be clear to our listeners, *Radical Uncertainty* is by John Kay and Mervyn King, the ex-Governor of the Bank of England. It's a fantastic read, fantastic. I'm almost at the end at the moment and it's one of those books I just don't want to finish. Well it's been great to get to know both of you better.

Thank you very much for taking time out of your busy schedules to come and speak to us. Until next time, this has been Tech Reimagined, and I'm Bradley Howard. We always appreciate it when you like and share our episodes and please hit subscribe if you'd like to get the new episodes as soon as they come out.