Tony Wang, Senior Data Scientist - Transcript

Denise: Today I'm talking to Tony Wang. Tony is a Senior Data Scientist at Cluey Learning and he got his PhD in psychology from UNSW. Hi Tony, nice to meet you.

Tony: Hi Denise. Nice to meet you as well.

Denise: Thanks for being here! So, could I ask you first to talk a little about your job? What do you do as a Senior Data Scientist at Cluey Learning?

Tony: Sure, so I think data scientist in general in the industry is quite a broad job description, but more or less we're interested in, you know, statistics, analysing data, applying statistical models, or machine learning models to come up with a prediction or an insight generally around a business case. So, common instances, you know, companies who might build statistical models to determine how much a customer will spend over the long term over Christmas period, or whether a phone user will stay on their plan when it expires. For me, we're doing something really interesting at Cluey Learning, so we're an online education, online tutoring company for children in years 3 to 12. We cater to students in mathematics and English, and as a senior data scientist there, we're really interested in learning analytics. So, we have data from online sessions of how the users interact with each other, who's talking, who's using the whiteboard, who's answering the questions. And I've build various learning analytics, do a bit of coding, to understand how the users are interacting with our product as well as how students improve their learning over time. And trying to build kind of psychology and cognitive models to try to predict that. And so, it's a really interesting fit and a really unique position that I have because I am able to combine my psychology degree, research, statistics, as well as a bit of software engineering.

Denise: It's really interesting. So, you did your PhD in Psychology. Is that necessary for the kind of job that you have now?

Tony: I did my PhD in psychology, for the job that I have now it's very, very useful, but in general, as a data scientist in the industry, I think having an advanced degree with a strong background in quantitative research, statistics, problem solving…. I think that gets you a long way towards getting the position that I'm in right now. Whether having a specific psychology degree, [is needed would] depend on the position.

Denise: Tony, what are some specific skills that you learned in your PhD that you find useful generally for your work now?

Tony: Yeah, I think the key skill that I learned was problem solving. Being able to understand sometimes an ill-defined or abstract problem, de-constructing that into what we're actually trying to solve, and then developing a plan. So, PhD research is designing an experiment from the literature, then formulating steps to solve those problems. So, secondary to that is being able to conduct quantitative research, being able to apply statistical analysis to get to the solutions that you're trying to solve. On top of that I think, not so evident, but equally important, are communication skills. So, being able to communicate your findings, whether it's a written report, or a presentation you know, to key stakeholders within the company. Those are quite critical skills, and are often undervalued within the marketplace and even within my industry.

Denise: What initially drew you to doing your PhD in Psychology?

Tony: That's a good question. What initially drew me? I think what initially drew me to doing psychology in general was I was interested in understanding people. Understanding why people think, why they behave the way they do, and so just generally psychology as a science that's what drew me in. I think what helped me further develop my research interest was my Honours year at UNSW. Being paired with a mentor, working on a single project for a whole year, going through that research process of asking the question, devising a solution, running experiments, writing it, that really kind of called to me because I generally am a curious person, so I like digging in and solving those type of problems. And so when you say we can go further in a PhD and build a new knowledge of work and kind of further develop those skills, such as problem solving, critical thinking, research, and writing, that's what drew me into doing a PhD.

Denise: And is this the kind of role that you saw yourself doing after studying your PhD?

Tony: Oh, definitely not. I think, data science wasn't even a word when I finished my PhD. I think like a lot of PhD students when they finished their PhD, they think the next step is post doc, then senior lecturer, professor, et cetera, et cetera, so climbing that academia ladder. And I did that as well. So I spent three years at the University of Melbourne, three years in the US, at Brown University. And you know, I learnt a lot of skills from that, but at the same time, as I was going through those experiences and going into those new environments, I was exposed to people who applied their research, their PhD skills in different environments. Whether that's directly applied research in, you know private research laboratories, or you know, using psychology at Facebook and Amazon, or just you know, using research skills to answer data science and statistical problems in various companies, that kind of opened up my mind about what future opportunities are there are with the skills that I have.

Denise: Yeah, it's really helpful. Going back to your job for a minute. What kind of person do you think would really enjoy sort of work that you do?

Tony: Yeah, so I think someone who's curious, who likes to dig into complex problems and also at the same time likes to learn new things while they're working. So, a lot of the time I'm doing research of new techniques of you know existing methodology of on the problems that I'm trying to solve. Sometimes there's not a known solution, or there's not a perfect solution, so we have to keep learning on the job, and learn new techniques. So, that's both challenging, but also, that's what kind of drives me because you always want to learn and improve your skill set. And at the same time, you also want to be kind of independent because I think as someone in a more senior role, you are responsible for driving the strategy and initiatives within my team and within the company, and so there also a large responsibility of executing a plan. And I think that's somewhat analogous to someone that's writing a research proposal or having a structure, a project where, you know, I see this problem, and developing a number of solutions that will take six months to a year, and then executing that plan.

Denise: Tony, do you have any advice that you would give to current psychology students who are maybe in their undergrad and looking ahead thinking what they might want to study next, or what they might want to do for work?

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Tony: Yeah, sure, I think biggest advice I would I would say is don't pigeonhole yourself as a clinical psychologist or organizational psychologist. I've noticed there are a lot of psychology problems, but that they're not framed as psychology problems. For instance, you know, in my company, learning is a psychology problem. You know other companies and marketing and consumer behaviour are psychology problems, but they're often construed as business or marketing problems. So, I think psychology has a wide range of applications in the real world, but sometimes psychologist students don't see themselves as having those skill sets. I would say that you should, you know, do Honours if you can, do a postgraduate degree if you can because I think having a strong technical skill set in the current workplace and going forward is quite valuable and that includes things like, you know, being able to do a literature review or problem solving, quantitative research, statistics, coding. So, those types of technical skills that which we might think are academia actually have value in the workforce. And I think psychology students should think that they have a generic broad set of skills that allow them to fit in different roles as long as they're kind of personal interests are aligned with those roles.

Denise: I think that's really helpful advice. Thank you so much for talking to me today, Tony. This has been really helpful, thank you.

Tony: Oh, thank you. It's my pleasure and I hope it helps the prospective students in psychology with choices for their career going forward.