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EPISODE 4

VIDEO TRANSCRIPT

Shiladitya:

Hello everyone. Welcome to tech careers in the new, the new podcast series presented by Accenture. I'm your host Shiladitya Mukhopadhyaya. In this podcast series, we'll get you the latest and greatest in the world of technology that's shaping the future of business as we know it. We're talking intelligent platforms, cloud AI, blockchain, extended reality, and a whole lot more every fortnight on Wednesdays we'll have for you a hot topic with experts speakers from Accenture talking about top trends in the space, how these are changing the world and creating growth across industries, and more importantly will tell you how you can learn more, build your skills and expertise to grow and stay relevant in your career. So today we are here to talk about AI, artificial intelligence, and of course, again, this is one of those very interesting fields of science and tech, which has been around for a while, but it's always been sort of a mystery as to what exactly it means. And I think over time and more recently, AI is a word which keeps coming up more and more in almost everything that we do all around us. So it will be really interesting to sort of demystify this technology and understand exactly how it plays out and the kind of practical applications that it has in the real world. And of course as part of a career if you're building a career in the field of AI. So we're going to be talking to Gopali Contractor, the Managing Director of Artificial Intelligence at Accenture and hearing a lot more about this.

Shiladitya:

Thank you Gopali for being here. It's lovely that we could do this show together. We are of course here to talk about the topic of AI and AI while the term I think we have heard for multiple decades, if not generations, is finally something which I think most of us are seeing. Uh, finally, in use in a, maybe in our daily life and you know, around us today. And while we also talk about AI in the context, especially about careers and the future of AI when it comes to work, in the field of AI, one thing that comes to my mind is the fact that AI was actually supposed to take away our jobs and make life easier. But here we are trying to understand how we will change in this new world. So please, if you could tell us a little bit about the background of, of course, this technology and yourself, uh, and the kind of things you're doing in this space.

Gopali:

Oh sure. Thanks, Shiladitya. Great to be here. Let me address the elephant in the room there AI taking away jobs would be a problem because I wouldn't be here otherwise. Right?

A little bit about myself, uh, it's been about 18 years in the field of technology. 15 of those years were spent in the US so I did the Wall Street route of uh, you know, being a software engineer, a developer, and then, uh, got into data. And that's where I found my passion.

So I was building out a data warehouse, data architecting for the big insurance company, and that's what I said. Uh, this is where I want to be. And I believe part of it has to do with me being a woman because, we kind of read between the lines and make those data connections. It's very very intuitive. But, uh, I was very intrigued by data and the relationships that, um, we as humans are unable to see sometimes in the data and AI is a very right fit for that because AI does just that. It tries, tries to augment what we as humans are unable to see in data. So after the data warehousing project, I was a CTO at a startup in New York City. It was a data mining startup. Where in we, uh, you know, um, extracted intelligence from digital receipts at the item level so if you Shiladitya went and shopped at Amazon. Uh, you know, MasterCard would only know that you spent 3000 bucks at Amazon but wouldn't have them on an item level details. Right? What we were trying to do is, uh, get into the gold mine of saying that Shiladitya bought a, you know, books for 2000 bucks and maybe a headphone for the thousand bucks that he spent, uh, at Amazon. So it was amazing. And we build that using machine learning. After which I joined Accenture, moved back to India, uh, back home, um, joined Accenture, and I have built the AI practice in India from scratch. So I was, I seeded the practice yard and now we are, you know, a good number in India and we supporting our clients, uh, using AI and its various technologies. So apart from that, if you're talking about, you know, just look at the history in terms of the industrial revolution on where we were automating things and at every point at, in the evolution, you know, the humans did thing that they were going to lose jobs, but we actually didn't. Right? So we, we able to, uh, go to better jobs and, um, you know, kind of do better things with our lives. So AI, is that, that space, that we support at Accenture.

I know that is a huge question mark on what it's gonna do in terms of the human race, and I think I even can't answer it. Maybe we will have robots, you know, flying us everywhere around and that'd be a scary world to live in. But, for the time being, we are looking at AI as making our lives easier, as you said, being able to augment our lives with things and of course there is, you know, positives and negatives to each technology and we'll get into that a little later. But if used in the right way, I think it could be a very, very powerful in what we could do in with it in our daily lives. Plus in the businesses that we support at Accenture.

Shiladitya:
Wow, and that's, that's very interesting and exactly the example you mentioned, right. It's actually something which I can totally relate to there's so much data around us, which we not necessarily always make sense of or can make sense of. If I were to just take a step back to understand the history of how AI as a field sort of specialized. Right. And if you could, uh, similar to the story you just told us about your own growth path, what are those, uh, specific, domain skills, which actually define, you know, the space of AI because it's also what we left behind. (BI) Business Intelligence, data warehouse. These are all data terms. What today stands as the crux of the AI practice? Maybe as an example in Accenture and other areas where AI is an applied field. What is the core function of what you guys are doing?
Gopali:
Sure. So going back to the history, uh, AI is not new. The technology is, as you said, decades old. It's been that in Wall Street for many, many years. 60% of the trading happens right now on AI algorithms without human intervention. So that's a big number. But it was just these very niche folks, PhDs in mathematics who actually build those algorithms and these were custom-built algorithms. So nothing that was open source are available for the common software engineer to use. Right? Then we had a winter of AI where an AI, as I said, was completely out of context, you know, nobody spoke AI, we were talking about automation. Not even at the RPA level, but just automating our businesses using you know standard software development.

AI got it's fancy. I think with four things that happen in the industry, Um, the huge amount of data. We all know that we just spoke about it. You're talking about computing power so, we have the cloud now and uh, computing is extremely cheap. It's not as expensive as it used to be. Should we go to crunch a lot of data? Uh, and if it let it very little expense. Uh, Third is the opensource community, right? So you have in fact, python libraries are one of the most popular libraries being used today, which are open source in AI so you, you have access to these very supposedly very niche algorithms that were only, you know, a handful of them and folks in Wall Street used them and now it's out there anybody can train, you know, an algorithm and I'll get to the anybody a little later. And last but not least, product companies investing in AI. So you're talking about the Googles, the Amazons, the IBMs and the Microsofts of the world who have built out an AI framework that is extremely easy to use. It's a workbench. Uh, you can drag and click and build out a models. Of course these are black boxes, but, um, they're investing so much in knowing that, you know, there is so much potential in investing into AI Algorithms. So that was a little bit of history. And in terms of practice areas in AI, we at Accenture the way we classified is quite simplistic. So if you think about an AI algorithm as one that is mimicking a human, and that's essentially what we're talking about here, right? We're talking about our senses. So you're talking about speech, you're talking about optics, which is your image. Yeah. So you're talking speech processing, you're talking about image processing, you talk with predictive analytics or machine learning, you talk about deep learning, which is the way our human brains are, uh, you know, mapped to, and you talk about, uh, you know, last but not least, uh, speech processing I spoke about, but there's one more I forget, but, um, essentially if classified them, you know, simplified them into these four classifications and they map to the way humans think.
So you have machine learning, you have speech analytics, you have virtual agents, you're talking about humanoids or people who can converse with you. You're talking about text analytics as to the one I left out. So there's a huge amount of text available out there. How much are you going to reach? So how many of us can actually go through all the new sites that we go through every day. It's just impossible next to impossible. So if you have a machine that could actually do that for you to analyze the text and generate a summary for you, that'd be great. Right? Right. But isn't that exactly what we as humans do? So if I just read up a passage or an introduction and she liked it, yeah, I would read through it and I would summarize it in my head. Right? But I can as a human only do it to that scale.

What we are trying to do with AI is just kind of build out the scale immensely. And the important thing to note is as we build this out, we as humans work in our ethics and our value system, right? We are born with certain, not born but raised with a certain kind of ethics and value system that's important for AI algorithms to be governed by this value system. Okay. Because you're now not talking to space, you're not talking zero one. This is all probabilistic, right?

So a, what I'd like to kind of focus on is, um, any outcome of an AI algorithm is a probabilistic outcome. Just as we humans are for a probabilistic outcome to carry weight, it has to be governed by a set of values, ethics, and responsibility. I think that's where the responsible AI part comes in, which we can kind of talk about an idea. **Shiladitya:**
To take on from there. Right? What, what are some real-world examples? Maybe if you could, uh, share with us about how these specific, uh, you know, methods you just mentioned, right. Of course, the compute power and the capability and the algorithms obviously are mature and have matured, but what is a practical example, which you could maybe share where this was actually put in place and of course led to a positive outcome, either for a business or an organization or something in which our listener would relate to.
Gopali:
Sure. So let me walk through the practice areas and give you a case study each. Virtual agents, we, I think we all use them. Yeah. On our bank side. So that's a no brainer. Chatbots. Yeah. So those are the thing. And uh, I don't know how many of us actually have used them and I have, they kind of work. So that's, that's, that's an application of natural language processing, right. Because the input to our virtual agent could be anything, right? it's, it's not a fixed input. And when and so that probabilistic input, because you're human may, you may ask a question differently than I would, right? So responses have to be in that domain. Uh, so that's a very simple application and everybody wants to do it, wants to do chatbots because of course you kind of tick off on your checklist, you know this thing you've done, you've done. Yeah, right, right. The second thing we've seen is a lot of traction on image analytics, um, with Google and its image data. Uh, there's a concept called transfer learning, wherein you can build out an image processing or image classification algorithms by using, uh, learned algorithm. So what Google provides to us is an image net database of images wherein it already knows what a human is versus what a cat looks like, right? So that is that featured obstruction is already done for you and then you kind of customize it on top of it and build out your image analytics models. So to give you an example of lymphoma, if you were to kind of use a human eye versus, or even under the Microsoft and versus using an AI algorithm, it be much more accurate to be able to diagnose it because the amount of images you can feed into an AI system would be much, much more than what the human eye or the pathologist has seen before.
Shiladitya:
These are practical examples you just gave us, which a sort of we were managing with earlier, right? We were, these are things which we, uh, which we knew we needed more computing power to do, or we needed a, I would say, a more models and more examples to sort of better train the AI models that we have and hence now they're performing at scale and they're able to do these things. Where is the takeoff point from here? I mean, maybe if you could elude a little to, what's the future is now that we are on this curve of, AI adoption being mainstream, where does this exponentially grow to and what is the maybe near, and of course the far future you said is us flying around on robots, but what's, what's immediately after this and especially to the fact that there is this a concept of augmenting human skills. What's the direction or directions in which this is now going?
Gopali:
So AI is not dead yet in terms of being mainstream. Yes, we talk about it, but the limitation of, so AI is not magic, so let's get that out of the way here. Right. It is a computer system that has been built by humans, just like any other programming. Uh, a set of our programming software would be right without data AI is nothing. So the, the bottleneck is that if there is no relevant data, you're not going to say it's garbage in, garbage out. If you were going to train an AI algorithm with irrelevant data, we're not going to be getting the right outcome, which means that you're really not going to be using it for the purpose that it should be. So we have changed the facing challenges in getting the right data for our customers. So we are kind of trying to fix that challenge because there's a lot of open data sources out there as well.
Plus the domain expertise. Now in the podcast world, right? I wouldn't know what features make for a good podcast. That'd be you who would know that, right? You are the domain expert in this room. So if I were to start on a journey of building a model for how well this particular podcast is going to do, I wouldn't know where to start. You know, I just wouldn't know. Maybe Accenture would be one data point that I'd come up with that it's a brand and you're in the people might want to listen to someone from Accenture, but that'd be the beginning and end of it. But if it were you, you would come up with 10 other features and we call them features in a, in AI Lingo, right? So extremely important that we have the business expertise involved in building out that model. It's not like, you know, it was before software development. You give a set of business requirements, uh, you know, the program goes and does it in a silo, test this out with some, some tests, examples and you're done. This is more of an integrative process because you may say that, you know, give me some examples of a podcast, but if you may say that point A has motivated than point B, the fact that it is a technology space, you know, for example, and a podcast is a technology, you know, in digital type of a forum means it's going to do well better than podcasts in art

for example, something like that. It's extremely important to understand that this is an iterative process of building the model and the players or the actors involved in the process are of course the data scientists, but also the business, uh, the domain experts and without which we are not going to be able to do that. So, AI hasn't taken off yet, so that exponential curve is not there yet with all this, again, I'm talking to Shiladitya as a human and his biases, with the 10 features that he gives me, right? So he may give me features that may not be important, but that was his point of view. Correct. Because we are training a computer system to act human-like there should be governance to say, did Shiladitya to do the right thing type of thing did Gopali kind of create the right features out of it and that's where responsible AI comes in. So as Accenture, we are very, very big into responsible AI. And then we give you a simple example. So if you think about a nurse, the first thing that comes to your mind is a lady, correct? The honest, yes. Right? You think about a doctor, the first thing that comes to mind is a man. That's true. And this is human bias correct. Now, even with Google, we built human bias in our data itself because at the end of the day, it's humans creating this data. Correct? So what are we telling our clients that there is already a bias in your data. You're seeing a nurse always as a woman versus a doctor always is a man, right? Do you want to neutralize this bias to kind of cut out human bias completely from it? Correct. And once you cut that out, then the outcome of the algorithm is completely different, right? Now is it ethical to do so? That's a question that has to be answered right? With the client, with our customer in, in the conversation, they can't make this decision in a silo saying maybe it is a valid scenario in their business context, right? Correct? So we at Accenture cannot make this decision just by ourselves, It has to be in the client contexting. I like to neutralize this bias in the data and then feed it into an algorithm and then see what the outcome is. Wow. So you understand the implication, and this is an extremely simple example. You talk about race, you talk about, you know, you can talk about anything, age, gender, sex, all kinds of things. And you can understand the implications of this, right? And how bad it could be if this were not controlled of, or we were not responsible enough to say, hey stop for a minute, let's look at the data and see if it's actually the right thing.

Shiladitya:

Right? So there's this an interesting element here, I think, which you just mentioned, right? The fact that what we are asking from AI are implementations of AI is always answers, right? We are looking for answers, which that this piece of software that drives at faster than what a human could arrive at. But it's important that the inputs given to it and the way it interprets them are governed by rules or directives which are set by the people who are practitioners of this subject. Absolutely. Uh, but in this context now it's a great time for me to ask you. So what is the kind of Skillset, uh, apart from the obviously the, I would say the ethical morale, character that one would need of course to build AI systems. What is the skill set you're looking for and you look for in your team maybe and uh, people in this domain who want to pursue careers in this domain?

Gopali:

So A, I look for folks that have a data background. Uh, maybe because I am biased too, I am from the data background. So biased to that, but it helps a whole lot because at the end of the day, you're crunching data. So if you have architected a data system, if you have worked on data warehouses, if you've done worked on BI, as you said, you know, absolutely easy to kind of, you know, fit into the AI stream, right? If you have no prior knowledge of AI, that's one second, uh, there's a new kind of workforce that's emerging here wherein you're saying, you know, if it's NLP, which is natural language processing, how about a person with NLP plus linguistics? Uh, so has learned a bunch of languages because as we started building out these NLP algorithms in a variety of languages, the intent of each language is extremely different. So talk about India that the number of languages we would need to support in India and it's dialect and underlying intent. It's like the context completely changes and huge exercise. So can you imagine the amount? So if a person were, knows marathi, does NLP for me for a system in Marathi, wouldn't that be much better? Correct. So I'm not looking for one-dimensional folks who are just, you know, kind of crunching data without thinking about the overall. So you're talking about, you know, this combination, maybe a, you know, a person for the ethics bit, a person who has machine learning expertise with and a lawyer type of thing. Wow. So a person like that in my team that can wear an ethical hat and says, you know what, this is not right. Or we go to kind of ethical hat though in society kind of a bit, you know, um, so very very different and creative folks, so you have to get creative with these solutions. There are many right ways to do it, right? So what is the best right way and, and answers are always probabilistic, right? So again, not determined it, there's not one route that you have to follow. Like if it's not an if then else statement, it's more than that someone who is not just a programmer mindset. You have the other two, free thinker, creative folks. Uh, like my son was reading up on economics as I was reading up on, you know, data science. So that combination will be amazing, you know, going forward because you know, you have all this knowledge of economics and how to apply data science to kind of predict economies, etc. Right? So those are the type of workforce that's emerging. It's a

way off, uh, you know, maybe a decade off. But, um, whoever the young folks that are listening to this, I think those are the things that you've got to keep in mind. Do the science bit, but also get a humanities aspect, uh, in your learning. So you have a like a complete, uh, all-around kind of a, a skillset.

Shiladitya and Gopali:
That's great, I was going to ask you what is the recommended reading here, but I think it's a literally two separate sets of books. Yeah. The two I am, yeah. Actually, uh, go into, yeah, yeah. But great. I think this is going to really build a very interesting new, future for work in this space and, uh, it's great that we, you could come here and share this with us. I think it's an eye-opener for all of us listening and I'm sure, uh, it will get a lot of folks kicked about this space and, uh, the interesting stuff you're doing here. Thank you so much Gopali, this was amazing and we of course hope, uh, to hear more about AI and of course what Accenture is doing in this space and uh, hope you have more people on the team to help build the good AI of the world.

Gopali:
Sure. Thanks so much. Thanks. Good to be here.

Shiladitya:
Thank you so much Gopali, this was a very interesting conversation. I think of course the practical applications of AI was one of the most important things, uh, which I think is we are going to see a lot more of going forward, uh, regardless of the field it's applied to, whether it's computer vision, whether it's healthcare and so on. So I think there's a lot of things which AI is going to make life easier for. And of course, there's a lot of things that will change as we, as humans adopt AI more and more. So this was really interesting. I hope everyone listening in, uh, had a fun conversation. Uh, you know, about how this technology came to be and of course, as it will be, become more and more part of our lives. So I'm hoping that a lot of people are inspired to take this up as a space for their professional careers.

To all of you who's listening in, if you're excited about what we discussed here today, and if you're interested in exploring careers with Accenture, check out the open positions@careers.accenture.com on the next episode, we are talking Cybersecurity, but until then, I'm your host Shiladitya on Tech Careers in the new, the podcast series presented by Accenture.