AI and You

Transcript

Hello, and welcome to episode 81! It's a new year, and what better time to recap what Artificial Intelligence and You is all about, especially since we have a lot more new listeners now. Our New Year's resolution at AI and You is to bring you the best guests, the best questions, and the best answers about AI and how it will change your life, your job, and your world. And my resolution is to get my new book finished! It also will be called *Artificial Intelligence and You*. And it will follow the same purpose and themes of this show. Which are… what? We know you're smart, but that's not enough to make sense out of where AI is and where it's going, so we're exploring this together, finding out what's real and useful information that helps you understand what AI is, and all the incredible number of facets that it touches or will touch in our lives. There's really no area that won't be affected – I like to say that I can take this from computer science to theology in thirty seconds. We range from what AI is doing in our world now, in business, politics, media, research, talking with experts working in those areas today, to where it will or might go in the near future and beyond, when we engage philosophers, transhumanists, and science fiction authors to open our minds to what's possible.

I try as much as possible not to take a position on AI, like many people will have as their message that "AI is wonderful, the future is glorious," and then their whole narrative has to fit with that, so you're never sure whether you're getting an unbiased view from them or one that's been sanitized to fit their story. And of course there are those on the other side as well, and they're going to have a hard time reporting anything that suggests that fears are overblown. I don't want to call myself an optimist, or a pessimist, but a realist. I like to tell people, AI isn't a good thing, it isn't a bad thing; it's a big thing, and you need to understand it.

On to today's guest, Tannya Jajal. She is a technology author, keynote speaker, AI futurist, and UAE Chapter Lead for the Global Women in Tech Movement. She's also the Resource Manager at VMware, and a technology contributor at Forbes Middle East. She called in all the way from Dubai to talk about her new book, *Thinking Machines: AI and the Intelligence Explosion* which was published last month. Here is Tannya Jajal.

Tannya, welcome to the show.

Thank you, thank you Peter. Thanks for having me Peter. It's a pleasure to be on your platform.

So, you've got a new book coming out, tell us about that.

Yeah absolutely. Over the past four years I've spent a lot of time contemplating and trying to envision what the world would look like in a post-AI technological era. In many ways I think the reason that appeals to me is because I'm drawn in by existential questions and I'm drawn in by not just the technological implications, but also the philosophical and psychological implications that they can have on society., I actually began writing about this topic where I started to explore

what I call the ethical, existential and practical implications of tech on society around four years ago. Somewhere along the line I realized that I've written a lot of content on it, published a lot of content on it, and that a lot of people, peers in my circle as well as within the technology industry which is where I work, at VMWare, were really drawn in by the ideas I was talking about. And for them it was an opportunity to kind of get the conversation started and I realize that everyone needs to be in on the conversation now, it's not just for scientists or technologists; we all kind of me to have nuanced discussions around what it means to live in this world and that's where motivation came from for writing my book so in some ways it's a compilation of a lot of the work that I've done over the past four years.

Let's trace this back to your history, because I'm always fascinated by the ways that people get into this kind of work; and you talked about the existential questions. Few people grow up learning about AI in school, so where was the point that this connected for you, that you became interested in AI that it became more than something that was in the news or academic, that it had to be part of your world.

For me it was a very pivotal and distinctive point during my journey. I wanted to become a lawyer, so I went to university and I was sure I wanted to become a lawyer. And the reason that I chose the law path was because I thought, I was a decent writer and a decent orator, I did well in literature and psychology, and it would be the sensible path, but somewhere along the line, I think it was in my second or third year at university, I was always very curious about the big questions, kind of like how the universe works, how physics and laws govern the nature of the universe, and so I was exploring what I call the works of what I call intellectual heroes, people like Stephen Pinker, Brian Green, Bryan Cox, and most importantly to me, Rick Kurzweil, who is the former director of engineering Google and one of the best predictors of future technology. When I was in my second year at University, I read *The Singularity is Near* and that had a dramatic impact on the way that I thought about the world. And I realized that actually what I'm drawn in my is what the future of work especially could look like in this post-automation world and I was filled with a sense of optimism and I felt lucky that I felt that my generation and future generations and the current working generation have the opportunity to do the kind of jobs that our ancestors wouldn't have possibly even conceived of. I thought that was a really exciting area to explore. That was the pivotal moment where I dropped my ambitions of wanting to be a lawyer and I decided I'm going to go work in tech.

I want to draw the distinction between being interested in being interested in and fascinated by something - because there's a huge list of things that fascinate me - and wanting to do something about it, wanting to make a shift in the world. What was the shift in the world that revealed itself to you that you want to make?

Excellent distinction. The fascination grew when I was in university but the shift in the world came through my work. Somewhere along the line when I was at VMWare, initially I was leading digital transformation projects where we were helping customers move to the cloud, and large entities here within the middle east. One thing I saw was the automation, or the code the software they were adopting was actually kind of changing the sort of the day-to-day jobs of the

IT administrators that worked within those teams. In some ways it was making it more exciting, more creative. And meanwhile I was having an existential crisis at work, where I was thinking okay I'm here yet I'm not feeling heavily fulfilled. That's when I started to research, and I learned about the whole concept of flow, right, to Steven Kotler and those visionaries and I thought I'm not in a flow state. I have all these fascinations, all these energies and it's not channeled in a way I want it to be channeled. That's where my motivation came. At the same time, I was reading Gallup polls were saying that 86% of employees are partially or fully disengaged at work. And I thought what is this a massive waste of human productivity right how many people out there are feeling what I'm feeling. Have not channeled their passions of doing fulfilling work and what that means for our economic state but also our mental state as individuals. And how that ties into AI for me, the possibility of moving away from doing routine mundane work into an era where the primary creators of economic value could be things like imagination and creativity, things that are often said to fulfill us, is actually quite an exciting place to be. So for me that motivation comes in having something to do with that right because of course there's some risks that come with implementing AI into organizations, which is a short-term job displacement and I don't know threanswers to that yet but I'm passionate about the sort of I don't know the answers to these, but the policies we can potentially build to protect people and to start to tap into these tools for the better.

Funny you should mention flow. I was just talking about that a couple of episodes ago and how these interviews for me owe a way of getting into the Flow State. Talk about the audience that you want to reach for this. Who in particular are you writing for?

It's a question I've pondered a few times. The motivation, who I ideally like to read this, is probably a more younger susceptible audience that's concerned about what their future may look like. What sort of job they may want in the future or what opportunity, what industries may exist in the future? And what this whole idea of replicating our intelligence in intelligent systems means for the human condition. I think especially for the younger generation that's particularly important. The book is not written in a particular style, it's not in the textbook style, not something only a young person would enjoy reading; but that's my motivation, right? Equally, the blurb of the book states explicitly its intended for anyone interested in science, technology and the future of humanity. The whole goal is to make the topic more accessible because it's such a black box and at this point it's become such a buzzword that I think people who don't know enough about it are sort of intimidated about asking. It's also for the average person who may not have explored this before but is curious to see how it may be relevant to them.

Talking about young people's reactions, that reminded me of something I was just reading by Sherry Turkle where she describes talking to a 13-year-old girl named Deborah, who had been learning programming for a year and then described the process as "there's a piece of your mind and now it's a piece of the computer's mind."

That's fascinating.

I love that. It's a very accessible description for children who are learning programming. And I seen in your bio that you're the chapter lead for the UAE for the Global Women in Tech

Movement. Can you describe what in particular the women that you interact with, as a result of that function, that role, most need to hear or do or change as a result of what you are learning and doing with AI?

Absolutely. I think specifically in this region where I am, but I think it's the global thing as well, when it comes to having just more diverse voices in this space, there aren't enough. The whole point of my motivation to run the women in tech chapter is to encourage more and more women to speak up. If you have an opinion, say something about it. And part of that is because it's not just for women, it should equally apply to all groups, all members of society, or all population. But in this space that is lacking right and that's because I'm in the Middle East and in some ways we haven't had the same progression historically and that's why it is relevant here here and actually the Dubai government has a big push for this and the Women and Tech chapter was launched in collaboration with the government of the Emirates because they're trying to advocate for this. When it comes to the AI space, I think it's especially important that we have a bit of nuance around talking about it, especially because it's become such a buzz. And so for anyone who works in any relevant industry whether it's management consulting, whether it's even something like energy or something like software and cloud, we need to be able to have a general and basic understanding of it. It is almost like they say younger generations will start to code and learn coding languages in the same way that we learnt other languages. Similarly, I think having that basic scientific and technological jargon will become relevant to everyone and that includes women in society. Now that's one outlet in which I can make an impact and that's why I have taken on that role but there's so many other ways to do it and so many other people who kind of need to hop on that, it's not exclusive to women in my view.

With respect to the adoption and development research of AI in the Middle East, are there any initiatives there, any projects, any particular work that's being done that have caught your attention?

Absolutely. For me one of the most fascinating ones is, it's known as the Mohammed bin Zayed University of Artificial Intelligence. It was recently appointed, it's a new research university and they're calling specifically researchers, PhDs potentially, to be a part of their community and they're quite new, so they're a startup culture and recently appointed Eric Zheng who is the former head of Computer Science at Carnegie Mellon University. They're trying to build a real global community they're building partnerships with other governments including the Singaporean government. And most importantly they really have this culture of wanting to be a research hub within the region. They are located just outside of Dubai and the Emirates, Abu Dhabi and I can really see them infiltrating forward, right. They're doing a lot around educating executives within the government sector on AI. A lot of the work that I'm passionate about they're creating curriculum around that, so that really caught my attention.

Is there something that you would like to see them devote resources to in that region that hasn't happened yet but could? Something that you might advocate for.

Generally this region, needs to advocate for more homegrown innovation. They're doing it but we still don't have a lot of R&D hubs that are specifically creating exciting things, creating

groundbreaking technology. Yes, you have researchers who are working on specific things and have labs in our building algorithms around specific fields like computer vision and NLP, but to have a culture of innovation, which is I think what the government wants, would be fantastic to have that be a more explicit outcome.

What sort of limiting beliefs and misbeliefs about artificial intelligence do you encounter the most often that you would like to, and are working on correcting?

I would say we're very easily susceptible as a human psychology to what the headlines say and we've all seen the headlines. It's rife from negativity in some ways because bad news sells. That includes things like beware the robocalypse is coming; machines are here to take your jobs. For me, that's a narrative that we really need to start to think about. We need to zoom out and see this from a big picture perspective because at many other points in human history we have been really worried about technological change. I think that at the individual level this pervades people, it causes anxiety. But even at an organizational level there's a little bit of resistance to change, because we believe that automation will take away our jobs. And this happened in the past, in the industrial era, and preindustrial era, especially when we were inventing new technologies. But the truth is that so far technology has proven in many ways to be a resource liberating source which creates more jobs and has the ability to cause more economic value. And it's proven to be beneficial for the people working within it, proven to often create more jobs rather than remove jobs, in the long run, and to be able to see that one has to zoom out and see things from a cosmic perspective, a big picture perspective, to see things on a grand scale of things rather than in a granular way. So generally when it comes to thinking about the evolution of AI, and I say this even to skeptics who are unsure about whether or not will reach that stage of general AI where AI will match human level intelligence, I say try to think of this from a big picture perspective because we need to get rid of that linear thinking of just thiking about within our life spans and think about what happened before and what's yet to come.

You were talking about the effects upon jobs and there's this dichotomy in AI talking about creating lots of new jobs and erasing lots of jobs and some people say both, and both at the same time, or one now and one later. Where do you stand on that prediction?

It's hard to say. Certainly, I think it's going to be both. I say that because this particular technology, AI, is different from previous technologies. So no doubt there will be repercussions that are felt way beyond our local communities and that will include short-term job displacement, so the way I like to think of it is what's going to happen in the short-term and what's going to happen in the long-term. In the long-term, if we focus on specific things like educational reform and reskilling people, we'll be able to have more skilled jobs, more fulfilling jobs. And we'll be able to sort of ensure that people are able to do those jobs the vast majority of people. In the short term there will be a bit of job displacement but this is where the role of policy makers and the field of technology policy becomes even more relevant, because we need government intervention almost right it's not just a private entity thing my view is you need that intersection to think about how to protect individuals in the short-term and then still maintain a sense of optimism for what could happen in the long run.

You mentioned education reform. Have you done anything and in that respect and at what level?

When it comes to education reform, I try to include education reform in all of my initiatives even through the Women in Tech program we're specifically launching a series of events in collaboration with universities, in collaboration with the government entities like the Sharjah Research and Technology Entrepreneurship Park to run future focus programs to help people build future fluencies. More actively I've been involved with an education startup known as Awecademy that was acting as a complement to supplement to traditional high schools. At Awecademy what we saw was that traditional high school curricula, we felt was no longer relevant for the current technological era right? We felt that we need to create multidisciplinary curricula and we need to equip young minds with the sort of skills values and competencies that'll allow them to thrive in this era of what we call exponential change and that's because the jobs that they will do are not similar to the jobs our ancestors did. We think of something like being a virtual reality architect, that requires computational thinking but it also requires artistry and it also requires knowing a bit of physics and actually knowing how to use devices in an efficient way and these are things that we need to focus on teaching young mind but also don't at Awecademy and also through the work that I've done with education reform we focus on fulfillment so we focus on things like teaching young minds have to deal with life love death philosophy things, that we largely ignored in traditional schools.

This is something that is very important to me too because I've got two daughters who will be in high school in a few years and so I'm deeply invested in looking at how the traditional educational paradigm won't work because they will be needing to educate themselves for jobs that don't exist yet by the time they get out of the higher education system. They will most likely want to enter jobs that I can't predict and maybe no one else can. And so how do you prepare for that? Have you had experience with working with children where you talk to them about this? What sort of things do you say? What sort of things do they say?

On multiple occasions, specifically through the education startup I'm involved in. We've run what are known as future fluency workshops where students who are currently enrolled in traditional high schools in Dubai or in the UAE spend their Saturdays which is the weekend with us and they are learning in a completely different way, we are teaching them things like critical thinking, we teaching them things like scientific literacy, we are teaching them how to do basic stuff like know when a source or an article is fake news and we are encouraging them to solve global challenges by tapping into the technological tools that they have. So essentially we are trying to build young innovators right who can build MVPs who can think creatively and sort of be at that edge innovation forefront. The amazing thing about that has been the feedback from those young minds though they're spending 4 hours with us, interacting, socializing, and they're working on their projects, they invigorated. And through some of the talks especially at school, most recently at an all-girls school in the UK, most young minds have the question of what should we do in the future? And something I always like to tell them is try not to focus on what the career path should be or what a job title should be, but rather on what skills you want to cultivate and what problems in the world bother you. And then you see where that takes you and

what you want to do with that because especially because the future is so unpredictable like you said. I saw a statistic from Mackenzie or the World Economic Forum that says that 65% of the jobs that primary age children will do in the future don't even exist yet. Mind blowing.

What sort of relationship do they have at that age with artificial intelligence?

That's a great question. Because when it comes to, I think the broader question is what relationship do they have with any technology? And like I said before, learning basic coding skills and basic abilities to be able to sort of coexist with these systems will be absolutely important. Especially at the school level and that's part of why we need guides, and teachers, and mentors who are able to prepare them to do this. Which means we'll even have to redefine the role of the teacher which is something I care about. But specifically there, I think that the interaction that young people have with AI is that they will live in a world where it's almost as if they coexist with them. For me, when I think of my device which iPhones and smartphones only exploded in the last seven years or so I think of it as an extension of my neocortex and I think we can take that almost to another level when we have the ability to be surrounded by intelligent systems. So in some ways for them it'll be a way of outsourcing parts of their intelligence so that they can focus on other parts which is exciting but which is also why it's so important for us to be able to educate young people and what they should be focusing on and what can potentially be outsourced to intelligent machines.

You remind me of an experience I had that showed me how much it's part of their world now. I was talking to a middle school group about the space program and the reason that we explore other planets and look for life, and talked about different aspects of what qualifies of life and then I mentioned intelligence. I said, "Can you have life without intelligence?'' And well of course yes. Lots of life is not intelligent. And just on a whim I said, "Can you have intelligence without life?" and they all looked at me like of course you can. And I said well, what is it? And they said "AI." Everyone knew that.

That's interesting.

That's just part of their air they breathe now. And I'm wondering particularly what insights you have into the fact that children are going to have to solve some pretty big problems in the world that we are leaving for them. Climate change is the biggest one and we're basically handing it over to them saying, "We messed this up, we're not good at it, you fix it." And at the same time, artificial intelligence will be growing by leaps and bounds to become this unknown thing that's somewhere from a part of our brain to an existential threat. How do you think that relationship will play out in the context of people coming of age in a world where they've got to solve these global crises?

I think one of the most fascinating perspectives that impacted the way that I think about these issues is the cosmic perspective. The amazing thing about space exploration and the Overview Effect, which is what astronauts experience when they leave the Earth's orbit, the amazing thing about technological progress and space exploration and probably one of the most exciting use cases of AI is that we may be able to take that impact, the Overview Effect cosmic perspective,

and democratize it, bring it to everyone and help them understand what it dould feel like. That could be either through sending humans to space or through the implementation of immersive VR where we can actually experience what that feels like and have that psychological shift in our mindset. And the reason that psychological shift is so important is because I think it will cause our future generations to reprioritize and think about what's important and what isn't important. That's where we break down ideologies and unity come into play and we prioritize ok climate change is a real problem for us. We need to get the whole world to agree and recognize that's the case, which we are currently struggling with and that's part of the mess we'll leave behind for future generations. But I think once we kind of have that ideological shift as on a planetary level there's some reason for optimism. And when it comes to the interaction with AI, the way that I like to see it, this comes from some AI researcher, the name slips my mind, is that we'll eventually build the wise cyborgs of the future. Now whether or not it will be an actual existential threat it's hard to say because all experts disagree about how AI will evolve. In the sense that how fast we'll reach that level of general AI and whether or not general AI will have goals that are different from our goals. That's definitely a large uncertainty and it's an existential threat that we can discuss and prepare young minds for psychologically, so that all the outcomes have sort of planned out so we're prepared for any possibility. But generally speaking, I think what's going to happen is that we'll essentially create the wise cyborgs of the future. So in many ways the technological singularity is here to come and we will merge with machines in some ways. And the reason for that is because ultimately, come what may, we'll find solutions to global grand challenges. I think that at least a lot of human beings are motivated by altruistic outcomes and by preserving the state of humanity, maybe not all, but that inherently exists in our inherent Psychology I like to believe. And that will hopefully prevent us from total catastrophe.

Talking about these grand visions in the future here leads us towards a natural conclusion. When you were talking about merging with machines, I'm aware of this bifurcation in listenership in that there are technical people who are going "sounds cool to me" and then there are a lot of other people who are terrified by that notion. Can you say anything about that that would put it in a context that dilutes perhaps some of that fear?

I like to think of it as what we're doing today with AI. Today we have AI that can create art and we have these incredible artists that are coming together to create some amazing visions of what the future might look like and it's those people who will be at the forefront and pinnacle of what could happen. So, we tend to think that if AI can write music at the basic level and can create art and write articles that the value of a human being will be nothing in society right and will pale in comparison to artificial intelligence that can potentially do it better than us but in reality, what's happening today what we're seeing already, and I would highly recommend a book to audience members interested in exploring this by Arthur Miller who wrote *The Artist in the Machine,* he's one of the leading thinkers in AI and creativity, what I would recommend is to explore that because what you learn is about these amazing and mind-blowing projects that are happening is humans are already merging with intelligent machines or with AI with algorithms to create mind-blowing astonishing works of art. I think that's what we'll do with all the other industries as well right. That's what we'll do to solve problems. That's what we'll do to deal with existential crises like climate change.

Fantastic. I really like the way that you framed that there. The book is *Thinking Machines: AI and the Intelligence Explosion.* Tannya Jajal, how should people get the book? How should they follow what you're doing?

The best way to follow what I do is either twitter or LinkedIn. My LinkedIn is TannyaJajal. I'm on Twitter @tannyadj and that's where I'll be posting the link to my book which is going to be published on Amazon in December.

Terrific. Thank you very much for coming on *Artificial Intelligence and You*, it's been a pleasure.

Thank you, Peter, it's been my pleasure.

That's the end of the interview. There are so many different personalities and roles working in and around AI now, and I love connecting with people like Tannya who can talk about how she relates AI to her circles. You can find her book on Amazon and there's a link in the show transcript.

In today's news ripped from the headlines about AI, Alibaba, which is like the Amazon of China, and has an R&D branch called DAMO Academy, announced earlier this year that they had built a multimodal, multitasking language model with one trillion parameters – five times the size of GPT-3. But then, they reduced its energy consumption by 80% and increased its efficiency by a factor of 11. But the real news is in what they did later to improve those numbers. Because they increased it to 10 trillion parameters and reduced the energy consumption to 1% of GPT-3.

You know, it's easy to get blasé, tossing around these factors of improvement, but where else do you see this sort of change? Did your airplane travel three times as fast to its destination this year? Is your car's fuel efficiency improved by a factor of ten? Are you eating a quarter of what you used to? Those kinds of off-the-charts numbers belong exclusively to a small number of exponential technologies, of which AI is the poster child. These developments are highly significant in a world where training a large language model is so energy-intensive that it contributes measurably to the carbon crisis.

Next week, I'll be talking with Kush Varshney, a distinguished research staff member with IBM Research at the Thomas J. Watson Research Center, where he leads the machine learning group in the Foundations of Trustworthy AI department, which is right in line with his new book, "Trustworthy Machine Learning," and so we'll be talking about how you can trust an AI.That's next week, on *AI and You.*

Until then, remember: no matter how much computers learn how to do, it's how we come together as *humans* that matters.

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