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AI LEADERS PODCAST – COMBATTING CLIMATE CHANGE

VIDEO TRANSCRIPT

SHYLA RAGHAV: Climate change, it's here. It's now. It's already affecting communities all around the world. It's affecting you and it's affecting me. And it's really shaping - reshaping our civilization.

MANISH DASAUR: All right. Well, welcome everyone to our podcast. My name is Manish Dasaur. I'm a Managing Director with Accenture's Applied Intelligence teams. I'm delighted today because I'm joined by my friend Shyla Raghav, who is the Head of Partnerships at New Division of Time, focused on sustainability and climate change.
Shyla, thank you so much for joining us and tell us a little bit about yourself.

SHYLA RAGHAV: Thank you, Manish for having me. I'm delighted to have this conversation with you. So as you mentioned, I currently work at Time. I'm part of a new division called CO2, which is focused on creating a digital platform for small and medium sized businesses to invest in climate action. Before that, I was at Conservation International, which is a nonprofit based in Washington, D.C., and I worked there for about a decade, really drawing attention to the fact that we can't solve climate change without nature. Prior to that, I was also involved in the historic Paris Climate Agreement, so I served as a climate negotiator, supporting a number of country delegations on their positioning with the international agreement. I've also worked at the World Bank, the United Nations prior to that. So I'm really, really delighted to be talking about how to take climate action into this new space of tech and innovation.

MANISH DASAUR: Wonderful. Such an impressive background. I'm very thankful that you've given us some time and energy to speak about this important topic. Thank you for joining us.

Shyla, let's dive right into it. I think the first question that would be interesting to get your perspective on is why now? Why is now the right time for all of us to be thinking about sustainability, to be thinking about climate change?

SHYLA RAGHAV: Yeah. So over my career, I think I've really been part of what I would say has almost been an awakening about climate change. You know, initially there was really the sense that climate change was an issue of the future. It was about preventing future harm and managing risks against other aspects of our society. And it almost felt distant in time and space. We were trying to prevent something bad from happening far into the future and mostly the people that we didn't know. And it was almost economic growth versus climate action. How much are we willing to give up to prevent future harm? But today, I think we've come to a different understanding and almost a different reality. Climate change, it's here. It's now. It's

already affecting communities all around the world. It's affecting you and it's affecting me. And it's really shaping - reshaping our civilization. I remember growing up here in California, my fear wouldn't be about drought or fire. It was about earthquakes. But now not a day passes that I'm not worried about water availability or even just the future of our home here in California. And we're seeing an entire overhaul of our model of development. We're seeing an overhaul in our values. Change has become our new normal. And I think we realize that there's really no economy and there's no value on a dead planet, on a planet without forests, without water, wildlife, clean air, safety. So it's not really a question of economy versus climate. There is no economy without climate action.

And so, with that really as the backdrop, with that really as our given, we can really begin to look at the space of artificial intelligence and climate change. How do we deploy the most powerful force at our disposal today, artificial intelligence with the sense of urgency to address climate change? What we need to do is really make better decisions faster, and we need to find ways of achieving efficiencies, reducing waste of very precious limited resources, reduce our risks, reduce the causes of climate change and to do so faster. And that's what I think artificial intelligence promises and offers as packaging, distilling and using vast amounts of data that we now have access to to inform those decisions. And if this information and if this data is fairly distributed, it can also help to democratize decision making and rebalance power by giving more people access to information.

And so to me, that's really the power and the potential of what's before us with artificial intelligence.

MANISH DASAUR: Yeah, I love that. I mean such a resonating point. Like as a as a father of young children, right, I think about what the planet's going to be when they're kind of taking over. But I think your point like this is a concern for every single human living on the planet, right? It's not for some folks who care. And I think your point around the trade-off is a very good one, and it's not about what we're trading off. It's about the fact that we've got to get this right in order for us to have a future. So it's less of a choice in my mind and more of a requirement that we all start thinking about this and taking action on it. I think that's such a good point.

I would also like the intersection of AI to your point. I do think the emergence that we've seen in capability on the AI side has been tremendous. And we're already starting to see a lot of applications of AI in the climate change and sustainability space, which I think is just very encouraging for folks like you and I. We're seeing technology being applied to send natural disaster alerts in Japan, from monitoring deforestation in the Amazon with it, but designing greener and smarter cities all over the world. So we're starting to see locations of AI to really help design a more energy efficient, more sustainable, more climate friendly planet. And I think that's a that's a very exciting time for all of us. So that's terrific.

Shyla, maybe I'll move on to kind of the second question and get your thoughts to start us off. What are some of the examples that you're seeing of applying AI to make a real impact in our climate change efforts?

SHYLA RAGHAV: Yeah. So the way I've seen it is that AI has really been deployed for a few distinct capabilities or types of decision making. So I mentioned about the distillation of large amounts of data and large amounts of information. So one of the use cases that I've seen is that we see kind of almost this fragmentation or overlapping reporting on climate action. So I mentioned that I've worked at the international level with a number of countries now setting targets to reduce their emissions. And they're all individually submitting reports to the United Nations on progress, and most of it's been self-reported. But even within countries, you see individual corporations

setting that zero targets and submitting their own reports of emissions. And so, one space where I've seen artificial intelligence be really powerful is as an accountability mechanism.
There's an initiative called Climate Trace, which was launched last year at the Glasgow Climate Talks, that is a partnership of hundreds of organizations, that's deploying more than 300 satellites, more than 11,000 sensors to do basically real time emissions monitoring and tracking, and then cross-reference what is being observed from space in terms of emissions and all of the different types of capabilities to even track methane emissions, for example. And then compare it against what has been reported on the part of companies or on the part of governments. And it can be a really powerful tool for increasing the precision and the accuracy of those reports, so that we actually have an accurate baseline of what's the state of play, but also can hold those actors accountable when they say that they have reduced emissions or they're saying that they're a green player in that space. So that's one area that I've seen this tremendous importance and tremendous applicability of that technology.

MANISH DASAUR: Yeah, I love that story. And I think your point around accountability is absolutely the right one. And as I think about it from our lens too, I think about accountability being a critical factor for us, like, for example, I think about Accenture ourselves. And as you guys know, and some of our listeners might know, Accenture is a pretty large multibillion dollar organization, lots of different operations happening to achieve our own environmental commitments of reaching net zero by 2025. Accenture is on pace to reduce its emissions by powering offices with 100% renewable energy by 2023, making smarter climate related travel decisions, being thoughtful about how we work with suppliers. And, you know, this is something that we're taking action on as well, deeply embedded in COP26. For those of you who don't know that the decision making body for UN climate change, we've got our leadership team participating in that. So I think leading by example, ensuring that accountability, I think, is an absolutely important point.
And I'll also maybe share another story with you because you talked about kind of making this economically viable as well. Actually, we don't think about it as a trade-off. We think about it as a win win for all of us. One of the stories I think about is the work that we're doing with the City of Chicago and helping them become a smart city. Chicago has over 450,000 buildings, with an average of 75 years of age for residential buildings. That equates to about $3 billion in annual energy cost. And we've been working with Chicago, creating a detailed analytics-based database and analytic tools to help Chicago really become more energy efficient, conducting actual electricity and natural gas usage analytics, human characteristics and demographics of how we might do that more efficiently, creating opportunities and efficient programs with them.

And this program's identified like a series of programs that we can go launch with investments that are driving savings of about $170 million back for Chicago in less than seven years or, sorry, less than four years. And I share that story because that's an example of AI actually making moves in the smart city place, helping our progression there. But doing it in a way that's also economically viable for us, actually creating $170 million of savings for the city of Chicago that could be used to improve the city's overall functions while making it a more sustainable and climate friendly city. And I think it's those kinds of initiatives that are really going to help us pick up the momentum and get economic leaders, as well as climate leaders to support these kind of efforts to move it forward.

SHYLA RAGHAV: I love that story, Manish, and especially because we're looking at a very complex system. So you look at what it takes to make a building efficient or an entire city sustainable. And you're constantly looking at different features. You're looking at transportation, you're looking at water efficiency, you're looking at efficiency. So you basically have to look at a whole system and a number of different sectors and optimize against all of

these potentially tradeoffs or competing influences and artificial intelligence can do that just at a different level than we could if we're manually going in and trying to tweak or turn different dials. So I love that story, and it has that kind of direct economic advantage as well. I can also share another example, which is deforestation, which is a space I spent a lot of time working on when I was at Conservation International.

So, you know, artificial intelligence has really been helpful in pinpointing, using satellite imagery in real time monitoring, especially if there's illegal activity, for example. So where AI has been really helpful is not just looking at where there's trees and then where there are no trees, so you're looking at deforestation. Often times at that point, it's too late once you've already detected a deforestation activity.
It's actually more useful, if you look at some of the precursors or some of the causes of deforestation or you look at correlations. And one such example is the construction of roads. So you know that as soon as a road is built, then the deforestation kind of just immediately springs out of that road. It's almost like these spokes. So with satellite imagery can really put in place some regression models to be able to kind of detect before where you're seeing those types of activities and where you might have a high risk of deforestation. And then, there can be some sort of enforcement or some sort of activity to go in and very quickly prevent that deforestation from happening and especially when it comes to illegal activity, you can kind of code areas that are supposed to be protected where there should be no encroachment. And then you kind of detect some, some movement or some activity in that space.

So it can be really important monitoring an enforcement tool. But then also what we've been able to do is provide local communities with access to that information, so that they can be better stewards and be more aware of what's happening on their own land and in their own territory.

The last thing that's really cool about what is being done in forests is also the use of different types of sensors. So in some forests, we have acoustic sensors which can pick up different types of bird sound, insects, animals, and that can be used as a proxy for assessing the richness of the biodiversity in that forest itself. So finding easier ways, I mean imagine having to send in a person to go count the number of birds or count the number of insects. And here you can actually just skip a few steps and really get information about the health of the forest just with one - a new type of sensor.

MANISH DASAUR: I love that. So creative. Such an out-of-the-box way of thinking about how to solve that problem using AI. That's a terrific story. And, Shyla, maybe one more. I just I can't risk, I have to share this story. So some of our listeners may not know. Shyla and I both went to the University of California, Irvine. It's both of our undergrad schools. So I kind of thought like one of the great things we've recently launched with UC Irvine is Accenture and UC Irvine got into a partnership where we're helping build a predictive model that might help identify using satellite imagery, just like you talked about, identify areas in Southern California that have higher risk of fire breakout. And that's a very cool concept because we're using geospatial analytics and satellite imagery to pinpoint areas that are drier than others, that have a higher fire risk than others, then we have power lines and other kind of things that are nearby, creating fire risk and really helping kind of fire authorities and the state and the counties think about what they might want to do to prevent the fire from ever starting.

And given just the risk of kind of wildfires that we've had in Southern California, I thought that was such a cool story for us to talk about together as well.

SHYLA RAGHAV: Yeah, that's incredible. And you were also seeing AI being used to try to prioritize areas for controlled burns, so that you look at areas that that might end up fueling fires and you can quickly eliminate some of that risk or find areas to prioritize for those types of activities. So that's a really cool story and

something that gives me hope for the sustainability of the Southern California region. Maybe one more example on agriculture. So one of the areas that we've seen as having a lot of promise is the development of or at least the monetization of carbon sequestration or storage to be able to access carbon markets. And to access carbon markets, you need to show that there's been some sort of climate mitigation benefit. So if you're kind of shifting agricultural practices or even stopping deforestation, but that needs to be validated or verified. So artificial intelligence has been really helpful to try to accelerate the accounting of how much carbon is being stored in different ecosystems, but also through different land use management practices. So that's one space where there's kind of a direct also economic or monetary advantage to deploying those technologies. But then also you could use artificial intelligence for crop monitoring, but also for yield prediction because with the changing patterns of climate, whether it's precipitation or even just kind of seasonal activities or when crops are going to be going to harvest, that is quite variable in a changing climate.

And so, models have been used to more accurately predict harvest cycles and when the best timing is for cultivation. And that's been a really useful type of technology, especially in developing countries where most communities are reliant on very climate sensitive sectors like agriculture for their livelihoods. So precision agriculture is also another space where there's really a lot of potential, a lot of promise for AI.

MANISH DASAUR: That's all wonderful to hear. I mean we think about kind of solving the most important issues on the planet. I can't think of issues more important than finding a way to feed our growing human population, finding a way to sustain the natural resources that we all depend on, finding a way for all of us to have clean water and prevent deforestation. These are some of the most compelling and interesting and important challenges for all of us to solve, and it's very encouraging to hear how leaders like yourself and how AI capabilities are really helping in that space. That's terrific.
Shyla, I felt that we might kind of switch our focus on is kind of where we see that headed in the next 5 to 10 years, right? I would love to get your perspective on we've talked about all the wonderful applications that we're using AI for today. As you think about what's important for us to get right, what's important for us to prioritize over the next 5 to 10 years, we'd love to get your perspective on how you see that evolving?

SHYLA RAGHAV: Yeah. Well, maybe I can just introduce some concerns that have been raised in the climate community about artificial intelligence. I think we can all acknowledge that there's a lot of good that can be done if deployed correctly and if designed in the right way and if the right people have access to that information. But I think we also need to recognize that artificial intelligence is really just a tool and it's a means to an end. And collectively, we need to be aligned on what that end is. What are we trying to optimize and prioritize for? Is it for commercial value? Is it for economic growth? Or is it for more equitable, fair distribution of very limited natural resources? Is it about kind of increasing our resilience to the impacts of climate change? Are we using these technologies to try to reduce our dependance on fossil fuels and deploy renewable energy? So I think that's really one of the most fundamental issues that needs to be resolved is it's just not going to happen automatically that artificial intelligence will be used for good. It really needs to be established as a right purpose from the outset.

And one of the reasons I say that is because artificial intelligence requires a lot of computing power, and we know that there are emissions associated with all of the computational power that is needed to drive all of these algorithms, all of this analysis, to hold all of that data. And also, artificial intelligence might create a future where we have a disincentive to address climate change. So I can give you an example. Automation and an automated driving, autonomous driving might actually reduce the

barrier to get cars on the road, which means that we might end up with in a future where there's more cars on the road than less. And you and I both know sitting here in Southern California that we don't want more cars on the road. And in fact, that's going to get us much further away from our climate goals. We actually need to be creating for smart cities, more public transit and more public transportation solutions to be able to green our transportation sector. So that's one example that, if not regulated or if it's not considered, we actually might end up causing more harm in the long run. And then also, just thinking about all of the footprint of the computational power that's needed might actually take us further away from our goals.
The second thing I'll say that is a potential, a pitfall or an area for us to consider is access and equity. So the incentives really are for commercial purpose of this information. And one of the things that we've seen is that data is really unequally distributed and there's often more capacity for gathering and processing information in geographies that are more industrialized.

And so, data is also more available in sectors where there's kind of incentives to collect it or incentives to process it, which is usually where there's a commercial purpose. And so, as a result, we see more adoption of AI in kind of financial sectors, for example, and lower uptake in sectors like agriculture because there's fewer incentives and there's kind of not as much of a line of sight to kind of profit or to kind of a commercial application. And that then leads to unequal distribution and bias in the algorithms that might not serve underrepresented communities or areas where there might be a dearth or less data available or an incentive to collect that information over time.
So I think because of that, we really need to have good standards and good practices kind of surrounding our use of artificial intelligence, but also kind of an intentionality beyond in terms of bringing some of those communities in and distributing or putting in place the incentives for the public sector to also invest in public benefit use cases of AI.

MANISH DASAUR: Yeah, I mean completely, I think you raised a lot of good points there. As I kind of think about, from my perspective, the next 5 to 10 years in the space, Shyla, I think about kind of three key towers, right? I think about, first of all, from a capability perspective, I'm confident that the AI capability will continue to evolve over time. And to your point, we're going to have growth in data volumes, which means we're going to have more and more ability to detect patterns, to identify anomalies, to identify opportunities. We're going to have more and more capabilities with computer vision and geospatial analytics. We're going to give us really a broad view of what's happening to our planet in a more real time way. All those things, we've got to find a way to do those in a more efficient way. So we're actually helping the net effect, not hurting the net effect.

So I do think you'll see a capability evolution, which it will need to be paired by an efficiency and what it takes in terms of resources to run those computations. So I certainly think you'll see the capabilities evolve. I think your point around responsible AI is a very important point as well, right? Making sure that our algorithms don't have that bias and are actually objective and actually purposed intentionally to help what we're seeking to achieve. So I think that responsible AI is that you're going to see a lot of growth in that over the next 5 to 10 years. It's already become, in my opinion, a C-level topic now.

All clients that we're speaking with, even our own leadership, talks a lot about responsible AI and making sure that we're kind of leading the charge in that way. And I think in the next 5 to 10 years, you're going to see responsible AI become a really important topic for all C-suite leaders in private and public organizations.
The last part that I'll kind of share with you is, in my opinion, I think we're going to need to drive a significant push in educating our policymakers around what we need to do with climate change and how AI can help. I still don't see AI's applicability as a national policymaking topic. If I think about kind of our recent political debates,

presidential debates that we've gotten on, we're talking a lot about other topics, but I don't see us really talking about how we're applying AI in a responsible way to help the planet. So I do think educating our policymakers to kind of think about that in that context and think about how do we want to govern the application of AI in this space? What rules do we want to set up to make sure that it's applied in the best and positive way? It's something that we're going to need to see a lot of traction on the next 5 to 10 years. Maybe I'll ask you, are you seeing the education of our policymakers as a very important thing for us to get right in the next 5 to 10 years or would you characterize that any differently?

SHYLA RAGHAV: Yeah, I couldn't agree with you more. I think there's this whole field of upskilling is how do we increase literacy about the capabilities of AI because that will then allow us to have in place the right standards, a sense of what's a good practice, what's a bad practice, what are some of the kind of potential inadvertent or unintended consequences? And I think also it will be critical for how our government is deploying its research, innovation and R&D funding, to be able to putting the right terms or the right conditions around those resources, so that they are, in fact, optimizing for climate impact and climate benefit.
And also, just to really think about integrating environmental assessment into the regulation and strategies to better align the use of artificial intelligence with global climate pathways, but also environmental goals. I think these are really critical needs in the next 5 to 10 years. And I also just want to applaud Accenture's leadership in this space and for creating a platform for this really important conversation.

MANISH DASAUR: Well, Shyla, I want to wrap by just thanking you for a wonderful conversation, as well as your leadership, time and energy in such an important topic that's important to every single person on the planet. Thank you very much for joining us today. Thank you to all of our listeners for listening. If you didn't have a chance to subscribe already, I suggest you do so. Thank you all. Speak soon.

SHYLA RAGHAV: Thank you, Manish.