

Transcript - Policy 360 – Episode 101 – Nivruti Rai

Judith Kelley: So usually when you think about AI and cutting edge technology, you think of China and the US and not India. And oftentimes when you think about tech, you think about men and not women. And a lot of times when we think about technology and artificial intelligence, we think about the future and not now. But we're here today to talk about India. We're here today to hear from a woman and we're here to talk about the now. And so, I am Judith Kelley. I am the host of Policy 360 and the Dean of the Sanford School of Public Policy, at Duke University.

Judith Kelley: My guest today was recently recognized by Fortune India, as one of the top 20 most powerful women in business in that country. Nivruti Rai, is country head of Intel, India. Though, she wanted to be a fashion designer when she was a young girl. But these days she's much more likely to be found discussing artificial intelligence, strategy, the future of the 5G cellular network, or the current state of tech policy. I hope that my conversation with her today, she can shed some light on how private business and government intersect, and especially when it comes to a US based company, and a country that's growing as rapidly as India is.

Judith Kelley: So welcome to Policy 360, Nivruti.

Nivruti Rai: Thank you very much. I truly feel honored to be here and talking to you, I am sharing my thoughts on technology, sharing my thoughts on why India and why now.

Nivruti Rai: So, I'll just start with women in technology. As a little girl, I was always really good in mathematics. But having said that, I always loved sewing clothes, and my mom would stitch a dress for me and immediately I would stitch for my doll, embroider and do exactly how my mom would do. So I know that both parts of my brain were active. But my dad's dream was always to ... Because I was one of his three daughters, and he always wanted us to focus on technology. And I wanted to fulfill his dreams. So I became an engineer.

Judith Kelley: How come your father, what did he do that he wanted you to focus on technology?

Nivruti Rai: He's an engineer himself, very bright student. India at that point of time, when I was born, still focused on women, with the bias of women have certain types of jobs, not necessarily engineering. So my dad wanted-

Judith Kelley: We still struggle with that here in the US, by the way.

Nivruti Rai: Yes, yes. I understand. So my dad had a dream that he didn't want our gender to come in terms of choosing jobs and he always saw that I was good in math. So he had a dream for me that I should become an engineer. So I did, and the kind of person I am, I put my heart and soul into whatever I do, even if it is a simple job of cleaning up the house, I put my heart into doing it. So when I decided to

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be an engineer, I wanted to be doing my best to make him proud and do work on technologies that excited me as well. And a very simple way of explaining AI is, if somebody understands math, somebody understands statistics and can do data analytics, that person can be an AI skilled. So I had-

Judith Kelley: So let me just jump in, because we're getting so used to using the term AI, but it can mean so many different things to different people.

Nivruti Rai: Yes.

Judith Kelley: So can you just help us just clarify what you mean when you are talking about AI?

Nivruti Rai: Sure. See AI is actually been in existence for a very long time. If you can automate tasks that human beings do, that larger umbrella is AI.

Judith Kelley: Artificial intelligence.

Nivruti Rai: Yes, artificial intelligence. Under that umbrella is other areas like machine learning, deep learning, brain inspired learning. So let me explain what machine learning is. So automation of tasks, leveraging huge amount of data, taking the data, building a model out of it, using that model to drive certain predictions and actions, is what machine learning does. And this model that we build is based on neural networks or whatever different technologies we have. That is what machine learning is. So oftentimes, people use AI and machine learning synonymously. But nowadays when people say AI, didn't necessarily mean machine learning or most of the times mean machine learning. But really, AI is an umbrella under which there are many technologies, and machine learning is one of them.

Judith Kelley: But am I right that artificial intelligence and machine learning has the added component of an inherent capacity of what you create to itself learn and build?

Nivruti Rai: Yes, yes.

Judith Kelley: Because we could take a build models, traditional statistical models and take lots of data and use them to make predictions like you were saying. But that is where we pass from the traditional data modeling into this new world.

Nivruti Rai: That's right. Yes.

Judith Kelley: Yeah.

Nivruti Rai: So the learning comes from once you build a model, you have a feedback loop, where if for example, there's a failure, your model gets corrected. And this feedback loop enables this learning.

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- Judith Kelley: Right. So where did you do your engineering education? And that feeds into my other questions. What's it been like for you, as a woman to make your way in this AI world?
- Nivruti Rai: Sure. So my education has been in US and in India. I had done my undergrad from India. And then I got married, and moved to upstate New York, where I started my masters in Rensselaer Polytechnic Institute in Troy, New York. And then my husband got a job with Intel. So he moved from Troy to Oregon. And that's where I completed my masters in Oregon State University.
- Judith Kelley: I see.
- Nivruti Rai: And I feel personally, what gave me an edge in Intel is besides engineering, I also knew statistics. So I saw data, I saw reports a little differently than the traditional engineers would, and that is what I leveraged back in India. So me and my team actually built an inference engine. So the training part is taking the data and building the model and taking the model and driving inferencing, is we ideated and built. And that is coming just because I was strong in mathematics, I had statistics and I had a hungry team that wanted to do more.
- Judith Kelley: Who was on your team? What kind of people did you have with you?
- Nivruti Rai: So you won't believe this particular inference engine that we built a proof of concept, and now it's actually full blown project that Intel is driving. I actually had a couple of just me and two other engineers. And then I had a whole bunch of interns. Interns, meaning people were going to school and they had come to intern for nine months. I leverage every one of them to build this. And you won't believe but in one year, we had a proof of concept. And now I'm happy to say that in Intel, India has a significant charter because of this ideation that we did about five to six years ago.
- Judith Kelley: Were you about to give up at any point?
- Nivruti Rai: It was tough. It was so tough because it was not part of my job that I was asked to do. I was doing something called analog engineering, which is building IO devices, for example, your USB port, et cetera. And this is very different. But I had one GM, general manager that believed in me. And he funded me few software heads that I could leverage. And with his belief, and the fact that he was there to protect me, save me if somebody says, "Why are you doing this?" I went ahead and did it.
- Nivruti Rai: Many times we did it on a shoestring budget, because nobody was going to fund us. This was not what Intel was even thinking that many years ago. But you know what I believe is, passionate people have infinite energy. And I collected those passionate people, shared the vision with them that this is what we can do. And created that kind of momentum that led us to completing this.

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- Nivruti Rai: And you know why India, your very first introduction was being a woman. So my dad believed that, "Leave your gender home, but dream big and be an engineer."
- Nivruti Rai: Second, India, while if you look at how many international patterns United States is filing or China's filing, it's these two countries that come to discussion when you talk AI. But one thing that is missing is, AI basically thrives on data. Not only data, so it thrives on quality of data, quantity of data, diversity of data and depth of data. And it fails in corner cases.
- Judith Kelley: So I'm afraid you've just lost some of our listeners, of course, I know exactly what you're talking about. But maybe if you could just explain a little bit sure about the corner comment.
- Nivruti Rai: Sure, I will. I will.
- Judith Kelley: Yes.
- Nivruti Rai: A corner case is a case that happens very seldom. For example, I lived in Oregon, and there one early morning, like 5AM I reached my office and there was a mountain cat that cross the road, jumped on my front of my car and then cross the road. That is a six sigma or nine sigma event that doesn't happen often.
- Judith Kelley: A rare event. Extremely rare. [crosstalk 00:10:16].
- Nivruti Rai: Very rare event. Extremely rare event. And I had jammed my brakes, I had no idea what this thing was, it looked like a big cat, and then vanished. But this could have caused an accident.
- Nivruti Rai: Now, this is a rare event in the United States. But if you look at India, there are cows, buffaloes, dogs, children occasionally crossing highway, running across. So if I build an autonomous driving algorithm, based on India data. I will build such a robust algorithm that it knows how to deal with these corner cases, that are so rare in the United States and in Germany.
- Judith Kelley: Now I understand.
- Nivruti Rai: So now large amount of data is important-
- Judith Kelley: By diversity of data.
- Nivruti Rai: Yes. You have all representation. Quality of data, so you don't have noisy data, unnecessary, relevant data is important. Diversity of data is important, because let's say, we are looking at hiring somebody. And Intel doesn't have many people from, let's say, Africa. And many African women are not there as architect. So if an African woman applies very strong, my AI algorithm can say

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don't hire because my data that I've trained my algorithm on, doesn't have this kind of verification.

Judith Kelley: It doesn't predict success.

Nivruti Rai: Yes. So diversity of data is important. Quality, quantity, diversity depth. Depth means that you have the ability of saying, "Oh, if there is a truck in front of me carrying steel rods, it means that the rods can occasionally get loose and hit the car behind. So stay away from that car. So, it builds a connection to lose rods inside the truck, some kind of context. And then finally access. So, all of these attributes of data and access.

Nivruti Rai: Indian Government has a requirement that if for example, you are leveraging India data to help solve India problem, you have access to it. And-

Judith Kelley: It's a wonderful policy.

Nivruti Rai: Yeah. So we are going to have an artificial intelligence summit in April, the government is driving and I'm happy to say that Intel is the lead partner. And the intent is to basically foster international participation and collaboration. So, don't just come make your presentation and go. The ministries will have five six problems laid out. Anybody who can solve those problem is welcome. Not only are they welcome, there would be an award. So it will be like a global hackathon. And whoever is the winner, the ministry or the government will fund that project. And it will be an ongoing engagement based on AI to solve that national level problem.

Judith Kelley: So that's wonderful. And we'll get a little bit more to talking about the interaction with government later. But I wanted to latch on to an earlier point that you made, which is really important. So if I understand you correctly, what you're saying is that, when we are building artificial intelligence products, that the intentionality and the choices that we as humans make about the type of data-

Nivruti Rai: Yes.

Judith Kelley: -that is used to build the model. Which may itself be linked to the type of people involved in creating the product, has ramifications for the quality of the products we create.

Nivruti Rai: Absolutely.

Judith Kelley: And how do you think about this from an ethical perspective? What does that make you think about, it's important that we do in the AI creation process?

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Nivruti Rai: I love this question, because this is something that we all need to think about. So I'm going to bucket the whole problem into three areas. One is data. Second is model. Third is use case.

Judith Kelley: What is the last one?

Nivruti Rai: Use case.

Judith Kelley: Okay, use case?

Nivruti Rai: Yes.

Judith Kelley: Okay. So this is-

Nivruti Rai: How aware are you going to use this AI model or solution?

Judith Kelley: Okay.

Nivruti Rai: So let's start with data. We have to value data privacy, we have to value data protection, and then data will be leveraged for commercialization. So we have to build policies around data to make sure that there's anonymity, there is data protection policy, such that the people whose data is being leveraged, their interest is safeguarded.

Nivruti Rai: Now let's look at the model. When you look at model, we want to make sure that positive or negative biases are not in that model. Whatever data you used, verify that is my model doing the right thing, just because I don't have an African woman who's an architect in my company, it should not predict that African women should not be hired for an architectural role.

Judith Kelley: And that sounds like that would be particularly hard, because the whole nature of the biases that we necessarily realized one, has it.

Nivruti Rai: Yes, exactly. That's why policy intervention is going to be really important to make sure we have enough understanding of the positive bias, as well as the negative bias. And lastly, where are we applying this? Is this AI model going to be used in a military context and in an unethical way?

Nivruti Rai: So I think policy intervention is going to be required across, in the data, in the model, as well as in the use case. And you can think that, we have to look at the social context of it, as well as, the context where we verify our data is good and safe, and as well as protected and privatized. And then the use case. So I think policy intervention is absolutely essential.

Nivruti Rai: I have a thought that I shared with my mother to explain her why AI and she hears that AI is going to take over everybody's job and it's like a Terminator, who's going to kill the world. The machine would be the ruling. What is?

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Judith Kelley: Yes. So here's mom and what does mom says? Explain this to me.

Nivruti Rai: Yes. She knows that I'm doing a lot of AI for Intel, and I am leveraging India. So this is how I explained to her and I said, "Forget about machines for a moment. Let's think about human beings. There are some very smart people, and there are so not so smart people. Now let's focus on the very smart people, there are very smart people who are doing good things. So great. We want to recognize them and award them. But there are very smart people who are doing bad things. So, what do we do as a society?" We have rules put in place, we have regulations put in place, policies put in place. So when you know we catch somebody doing wrong, that somebody is put in the jail or somebody's information is taken away, or somebody's asked to be cordoned off somewhere. So we have ways-

Judith Kelley: We have ways of regulating human behavior.

Nivruti Rai: Regulating-

Judith Kelley: And streamlining it for good.

Nivruti Rai: Streamlining it for the good of the masses. That we benefit from this smart people and their goodness, and we stay protected from the vicious, evil, our minds.

Judith Kelley: Sure.

Nivruti Rai: I feel why should machines be any different? There will be those people who will be leveraging machines to do wrong things. And look, just like natural intelligence is supported by policy, regulation, rules, guidelines. To safeguard the interest of the masses, we have to do exactly the same thing, in the case of artificial intelligence.

Nivruti Rai: To me, artificial intelligence is honestly augmented intelligence, because we will be creating and those smart minds will be creating and doing things. And we can always have interventions and protection through a lot of these policies, guidelines, regulations.

Judith Kelley: And do you have a solution for the not so smart people as well?

Nivruti Rai: So the not so smart people, in the AI, they may be smart in many other ways. I feel these will be the creators of AI. And essentially, AI will become a tool. The not so smart people in AI will be the consumers. And I really feel that tomorrow, AI will be so pervasive that everybody will be using AI as a tool, like we use Excel today. It'll be like a tool. I want to move to this place. Now AI, here is my personality. Here's what I like, tell me which place are between these, which is the best place for me?

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- Judith Kelley: And in some ways where we are using artificial intelligence, that we don't yet know it.
- Nivruti Rai: Yes. We don't even know it.
- Judith Kelley: But I have to know, what did mom say?
- Nivruti Rai: So mom said, "Yeah, that makes sense." She suddenly was so relaxed, that there are bad people doing bad thing, but we are still living in this world. We're still living in a balanced world.
- Judith Kelley: God, good, good.
- Nivruti Rai: So she said, "Okay. That means we will have ways to control the bad machines also."
- Judith Kelley: Right. All right. So you talked a little bit about India's government, and it sounds like a very productive exercise they're about to embark on. So is India trying to change its image around AI? Because India has had a certain profile and what it does and technology, call centers, et cetera.
- Nivruti Rai: Yes. Yes.
- Judith Kelley: And so is the government concerted trying to change this image?
- Nivruti Rai: Absolutely. Absolutely. So I'll tell you, part of the expectation or an almost duty for companies like mine, or citizens like me, is to coach and train people who will be the decision makers, policymakers on what is AI? What needs to be done before we actually implement AI. So we have been doing that a lot.
- Nivruti Rai: Having said that, I truly believe, post 2030, you can it be 35 or 40. I don't know. But some time 20 years later, I really believe that countries that have ways to monetize data, to actually create data as the new oil, will be the ones leading. No longer the real oil or fuel or energy sources coming from, whether it's a nuclear energy source of fracking, will determine the wealth of a country, like the Saudi Arabia and wherever there's primarily oil that's driving the wealth of the nation. I really believe it is going to be value that you generate with the lot of digitization that's happening, and with a lot of information that data will create. And data into information, bulk of it will be created through technologies like AI. Transmission will happen through 5G, and then storage will happen through interesting storage technologies, like 3D XPoint.
- Nivruti Rai: Indian knows that. And the first time where India is actually realizing the benefit of 1.35 billion people, is because 1.35 billion people are generating data. And the interesting part is about 65% of India is less than the age of 35. So one, there's huge amount of data. Two, the young people are very aspirational. And

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three, government understands this and is building national level platforms on which many startups can incubate, for example.

Judith Kelley: So just to clear. Just to make a point for our listeners. So it seems for what you're saying is that the most valuable resource of the future is not a natural resource, but it's a manufactured resource, and it's information.

Nivruti Rai: Yes.

Judith Kelley: And that the larger your population base, the more well positioned you are to produce this resource?

Nivruti Rai: At least the raw material is there.

Judith Kelley: Right.

Nivruti Rai: Now what we need is the infrastructure to change the raw material into value. So what the government is doing is, I'm not sure if you heard of a program, which is biometric based identification program. It's called Aadhaar. What it does is, it takes the biometrics like fingerprints, or picture of your eyes and the cornea. And it establishes the identity. So we have about 1.35 billion people and 99% of the population has this identity. Now, because of this, there have been so many businesses that have been spurred, because now people can have bank accounts. People that didn't have an identity card, government issued ID, now are having bank accounts. They have ways to buy their train tickets or plane tickets, because now they have an identity card.

Nivruti Rai: This identity card is being leveraged on another platform, which is called a unified payment interface. You have an ID. And now government has built a unified payment interface. Now what is the unified payment interface, is it knows the identity, it knows all your bank accounts digitized. It can enable this bank account to transmit money here, or these bank accounts to go shop on an e-detail side, because you know that a lot of India is focusing on e-detail also. So it spurred many new businesses.

Nivruti Rai: Not only that, it is basically creating awareness for people where even street vendors, for example, are using this payment interface through applications like digital wallet. So you have a digital wallet, we call it one of the popular ones, ATM.

Judith Kelley: Like we have on our iPhones now.

Nivruti Rai: Yes. The ones you have on your iPhones. The street vendors you can pay through a digital wallet. What happened is, India was a cash driven economy, it jumped from cash to-

Judith Kelley: It leapfrogged.

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- Nivruti Rai: Yeah, it leapfrogged, to digital payment, skip the credit card in the middle. So, I believe in many such areas, India will leapfrog. So, for example, people may not have the internal combustion engine cars, but they will have electric vehicles. They will not have any cars and they will use the gig economy like the Ubers, and in India has a local one called Ola and stuff like that.
- Nivruti Rai: So, I feel that Indian Government is investing money in these national platforms based on a lot of digitization, such that more startups can incubate and create value. India government knows that if you look at United States, the three areas where United States is generating huge amount of unicorns, are in cloud computing, and in AI, and in social sciences. China is doing in the space of autonomous driving, health and AI. What India is saying, "Okay, so far, we have focused on e-detail and services. We need to focus on AI cloud computing and health."
- Judith Kelley: Got it.
- Nivruti Rai: That's the focus.
- Judith Kelley: So something you said though, makes me want to go back to your mom. Because we're talking about the smart people, and how some of them do good and some of them do bad, and we can put the bad people in jail.
- Nivruti Rai: Yes.
- Judith Kelley: Now we're talking about a government that is collecting biometric information. We're talking about technologies that are allowing you to take a DNA sample and start to generate rudimentary images of faces based on that DNA sample. The technology that China is exploring now, I'm sure you've heard about.
- Nivruti Rai: Yes.
- Judith Kelley: And what if, as we're seeing in China, for example, the government is not putting the bad people in jail, but the government is being the bad people. Do we worry about ... What are your thoughts around what you are creating? Don't tell your mom this.
- Nivruti Rai: Point number one is, India is a very large democracy, hugely different from how China operates. So much so that so many times decision making gets so late that I worry that we will miss time on doing certain things. As a result, I feel that because of the transparency of what the government is driving is so there, that for the government to drive an agenda like what China does, it's not possible in India. Because anybody and everybody is a decision maker and can ask a question and the government has to-
- Judith Kelley: Too decentralized and too transparent?

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- Nivruti Rai: Yes.
- Judith Kelley: Okay.
- Nivruti Rai: Yes. Too decentralized and too transparent.
- Judith Kelley: But in general should we worry about the technologies we are creating?
- Nivruti Rai: Yes.
- Judith Kelley: So India's government may not be doing it.
- Nivruti Rai: Yes. No, but India government is aware that we have to put policies into place, they are worrying about if autonomous driving happens, and a car is in an accident, who should the car save? The guy on the road or the person in the car. BMW has a philosophy that anybody sitting in my car is the most important. And now the government of India is saying no, if there are kids or older people, we have to pay special attention to them.
- Nivruti Rai: So I think that we will build ways to protect our human interest through a lot of regulations that even industry leaders are being part of. So for example, me as an Intel leader, we actually contributed to bulk of the policy paper that India wrote. So they're seeking help. And what is interesting is, I'm a multinational company. They could think that I'm an American company, but it doesn't matter. They know that we have the capability. We have done it elsewhere. So they're seeking input.
- Judith Kelley: So they're calling you up and you're helping them with-
- Nivruti Rai: Yes. So the reason I call that democracy is like they say, "It's by the people for the people." So the by the people part, I feel will safeguard our interest. And as long as we have a collaborative way of defining what's good, what's not good, I think we'll be okay.
- Judith Kelley: So what have you learned now when you say when Intel ... Well, first of all, I'm glad to hear we are going to be okay. I am sure your mom will be glad to hear that too. But when Intel gets contacted or engages with the government on driving policymaking, what are some of the core insights you've learned from that collaborative process with government?
- Nivruti Rai: Yeah. So I'm going to give you an example of 5G. So I actually lead a 5G consortium that comprises of government, as well as industries. And industries, there are engineering companies like Qualcomm and Nvidia, but there are use case companies also which are like Facebook's and Googles and Amazons and Flipkart, and Walmart. So all of them are part of it.

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- Nivruti Rai: Initially, government was pushing for, "Hey, we have a different need in India. So, we will drive a different standard. We will not adhere to the global standard." So it was my responsibility to go explain the pros and cons. Okay, if as India we create our own standards for 5G, our own regulatory requirements, we will have to build a customized program. As Intel, I will have to build a custom solution for you. And then you have to build a custom software stack on top of it. And that's going to cause a delay. Every single technology adoption by the 2G, 3G, 4G, India has been two to three years late.
- Nivruti Rai: But now if you have desire to be on time or really close to on time, then what we need to do is make sure we understand the custom needs that India has. For example, this is what I brought up to them. China has three excellent area as compared to India, but same population.
- Judith Kelley: sO China's three times has large area?
- Nivruti Rai: Three times in land area, but the population is roughly identical. That's just for ease of math to say that. So I explained that the infrastructure investment required in China is going to be huge, three x more than India. But the problem for India is, in one third the landmass, same number of people. So, density is going to be high. So what we need to do is influence the global three GPP standards that this is the Indian need, here is the kind of requirement I have and build it into the global standard. Such that when the products come out, you will also get the product in time and you can implement. You can borrow the stack that has been built and build your tiny little India need on top of that.
- Judith Kelley: Yeah. So who is the global group then that works on this together?
- Nivruti Rai: There is a 3G EPP global body that builds these standards. So they have ... They bring out 5G standards and they're different versions of the standards that everybody's supposed to deploy. Now, China has its own standard. But China has already invested so much, they may not be late, and they are actually going to be on time. But India, on the other hand will surely be late because we don't have that kind of investment yet.
- Judith Kelley: So the challenge is to get your government to accept the advantages of approaching the global-
- Nivruti Rai: Global standardization. Yes.
- Judith Kelley: Right, right, right.
- Nivruti Rai: And I truly believe-
- Judith Kelley: And to convince the global side of the advantage of incorporating the Indian needs.

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- Nivruti Rai: Yes. Because I really feel that this will spark the innovation, multinational innovation will be spurred. So I'm saying I'll safeguard India's interest, but influence the global body.
- Nivruti Rai: So those are the kinds of things that ... To say that what are the technologies available, like data protection, blockchain. So intellectually participated, and we tracked. Blockchain is a technology not just for storage, but also for tracking the different hands your product has gone through. So government of one state called, Gujarat, gave a fertilizer subsidy to the farmers, but it goes through many hands.
- Judith Kelley: I see.
- Nivruti Rai: So we were able to track where the fertilizer subsidy was and cashed through the blockchain program. So we inform the government, "Okay, blockchain is a technology. It's not just for Bitcoin but you can use it for tracking the fertilizer subsidy." So we've become almost like a technology advisor to the Government of India.
- Judith Kelley: That's excellent. So you're also going to announce something while you're here. I don't know you talked before about this event that the Indian government was going to put on. Is that the same thing as the global AI summit?
- Nivruti Rai: Exactly.
- Judith Kelley: That is so, just explain a little bit more about that before we sign off? And then I have one more question for you after that.
- Nivruti Rai: Sure. Sure. So China recently had AI summit, where there was a lot of discussion between Elon Musk and Jack Ma, and there difference in philosophies. And it was a very large scale event. India has aspiring to do a similar event, but they have tagged it AI for humanity. And what they're looking at is, what are the national level problems that India has? And how can we attract the global experts to help solve and partner in the solution development both from resources, as well as sharing information about the problem?
- Judith Kelley: Got it.
- Nivruti Rai: So, we're going to have this in early April, and we are inviting academic institutes, as well as many industries, governments to participate. And I'm happy to say that Intel, while it's a government program, but Intel is the one of the lead of partners in enabling this. And we would love to have Duke presence.
- Nivruti Rai: Just while I was flying into Durham, I read a news article, which really made me happy that Duke just concluded a heart transplant-
- Judith Kelley: Yes. Did you read that?

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Nivruti Rai: Yeah.

Judith Kelley: That was so exciting.

Nivruti Rai: Yeah. From what is called a donor of ... Somebody is already dead, DCD I think is what you call it. The donation is coming from [crosstalk 00:36:45]. Yeah. So, a dead heart transplanted-

Judith Kelley: Into a live human being.

Nivruti Rai: -gave me two things to be happy about. One, the number hearts that will be available for transplanting, and then to make it a successful transplant. I was so happy because I was thinking that in India so many times people are dying because of hot weather, cold weather, high fever. Something that in United States you cannot dream that nobody will die-

Judith Kelley: That that will be a cause of death.

Nivruti Rai: Yeah, nobody will die because somebody had 105 temperature, and nobody had access to medicine. And I feel that with technologies like robotic surgeries, with technologies like 5G, some of these developing nations will have access to this healthcare. And I really want to see how in this global AI summit, Duke and India can partner and help build medical solutions.

Judith Kelley: It sounds like a good combination to me. Before you leave, though, I want to ask you one last question.

Nivruti Rai: Sure.

Judith Kelley: So somewhere out there, there's a little girl, she may be the youngest of three in India, or she may be the youngest of four in the United States or wherever. There's a little girl out there and she's sitting there, and maybe she listened to this because her parents were listening to it or something. And she said, "That sounds so exciting. I wish I could do something like that." What would you tell her?

Nivruti Rai: Oh, my gosh, this is the most poignant question you asked me. What I will tell her that everything is possible, don't give up. Don't be disappointed by small early failures. While I grew up in India, Abraham Lincoln is one of my role models based on his philosophy. And one of his philosophy was, "I always failed upwards." He failed city elections. He ran for state, he failed in state elections. He ran for the country and he became the president.

Nivruti Rai: Growing up, I have had a lot of failures in my life. And somehow failure gives me energy to rise. It's almost like I want to defy failure. I roll up my sleeve, and I want to recover from failure, and learn from it and take a larger leap next time.

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So my ask to that one little girl somewhere is, learn from your failures and take a longer stride next time.

Judith Kelley: I love that. I love that so much. Thank you so much for-

Nivruti Rai: Thank you.

Judith Kelley: -joining me today. Nivruti Rai is country head of Intel, India. Here at the Sanford school, we have a growing interest in tech policy, and Nivruti Rai is here at the invitation of David Hoffman, who is a new faculty member here at the Sanford School of Public Policy, and has come to us from Intel. We're very pleased to have him and you here today.

Judith Kelley: I'll be back in two weeks with another conversation. I am Judith Kelley