The interaction between humans & AI

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BRADLEY HOWARD, ENDAVA HOST (BH): Hello, everyone. This is Bradley Howard and you're listening to the latest episodes of the Endava podcast, Tech Reimagined - a podcast where we pick the brains of the most influential experts in their industries to help answer some of the big questions around technology that we have. Today, we're diving into a really interesting topic discussing the interaction between humans and AI, or Artificial Intelligence. Having pioneered the transformation of mobile internet, emerging digital technologies and sensor based data throughout her whole career, our guest today is Inma Martinez. Hello Inma, how are you?

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INMACULADA MARTINEZ, DIGITAL PIONEER AND AI SCIENTIST (IM): I'm really well and really excited Bradley.

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BH: Would you like to give us a little background about your career?

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IM: So my career is quite diverse. I started in banking at Goldman Sachs in Zurich, which was a bank involved in the development of the Internet in the 90s. And then after many years, I switched to a client which was cable and wireless. And lucky me, they gave me the Internet. I was the Global Head of IP services because nobody wanted it. Because the internet in those days, nobody could understand what that was. There were no websites and I was lucky to have it. And that led me to be part of the pioneers that develop wireless access protocols, the famous WAPs, the XML code to render HTML access onto phones. And I built with my team first AI of mobile internet in the 2000s. So from then I have been involved in every single emerging technology that digitized industries like video and music and many more sensors and connected cars. I currently do quite a lot of government advisory because finally, governments are concerned that AI development should be put into frameworks and be for the highest benefit of the people. So, yeah, that's a very quick 'in a nutshell'.

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BH: Well, let's start talking about artificial intelligence first. What's the biggest misconception around AI?

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IM: The biggest misconception is that people think that AI is an entity that has desires and thoughts by itself, and that on a fine morning is going to decide to destroy us or to completely go off the rails and be, you know, the demise of humanity. That's one of the worst things that I have to fight on a daily basis, because that is how it originally was written about. And finally, now we see that it's quite contrarily a force for good.

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BH: So a lot of people worry when they hear about AI, from the big Hollywood films where humans end up being eradicated by AI robots or whatever that is. On a more positive note, what are the big benefits that AI can bring to us humans?

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IM: The first big benefits is prediction. I'm going to, you know, to the top of the pops prediction. Of course, in the early stages of development, AI came to be developed because we needed to deal with complexity, you know, tons and tons of data with computations that we couldn't do with existing statistics or object oriented databases. You know, we have to go deeper with mathematics to deal with complexity. We deal with not knowing what is out there or, for example, trying to achieve perfection, but mostly based on computation. Now, prediction is really a superior level because not only do you deal with something, you identify what it is, you explain, you know, this is really what is going on here, but you can predict the outcome. That is something that, for example, in the world of healthcare is beginning to astonish.

For example, image based diagnosis, you know, the majority of radiology, MRIs, CT scans, you know, it's just an image. And then your radiologist has to look into that plaque and then say, Oh yeah, I see that the tumor here is one millimeter. Like, that is nonsensical. In the very near future, the actual detection of tumors, of maladies, anything, will be done by the machine. But the best thing is it will be able to predict how it's going to then evolve. And, for example, in fields like rheumatoid arthritis, imagine if you know, we would know how something is going to look like in three or six months, you know, it's really, we're moving towards a world where, because of AI prediction, we'll be able to create better therapies. We'll be able to then know how to create better strategies, you know, it's not just weather prediction.

I remember when IBM bought The Weather Channel, you know, if you ever go to the US, there was a TV channel that was all day long the weather channel and then one fine day IBM buys it. And I remember nobody could understand what IBM was doing. IBM was buying The Weather Channel because it needed all those super trained predictive algorithms to teach Watson new tricks. Every time they bought a company, it was for Watson to learn new tricks, you know? Now, weather, now this, now that. And it's prediction, that is really going to be relevant, but many more things. I mean, the way I see AI function in the world – it's infiltrated so many segments in some funny and serendipitous way. For example, I don't know if you play golf, but for people in the audience listening to us, if you play with Callaway clubs, the Epic Flash, which is a 2018 drive, the iron inside has been designed by an AI system.

Rather than having the traditional kind of cross shape that the humans in the design department were developing year after year, they decided to give an algorithm 15,000 data points of physics. You know, when you hit the ball and it has to travel through space, it a coefficient of restitution. You know, how far is it going to go? And that is what AI likes. So the iron came looking like a ripple, like when you throw a stone on a leg and there's ripples, and they almost didn't build it because they thought, what is this nonsense? It doesn't look at all like what we did before. When they built it and they started playing with it. It was crazy. You know, like 30 yards, or 50 yard stops above all the other ones. So AI is finally showing how useful, how fundamental to our progress it can be when it is used for good. That's the ultimate thing.

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BH: And you mentioned in your introduction that you are advising governments on AI as well. How do you think that governments will be able to use AI for good?

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IM: So the fundamental pillars of where we are working are obviously responsible AI. AI, when it's developed and put in the world, it needs to create good. Fundamentally, responsible AI. Also, Big Data – it's not just big, by the way. Data was always big for us, but some consultants decided to create a new funky name. And now data is almost like a product because data now is tagged, it's labeled, it's stored in new ways, it's categorised. So the data now is becoming like an element, like a tool, like almost like what you used to build up something with a more kind of homogeneous feel to it.

Obviously, the future of work is one of the big areas where we work. How humans are going to really develop their thinking and their potential when they pass many, many computational tasks to their machines. What is it that we are going to be doing at work? And really what is going to happen is that we will be more creative. There is a massive renaissance coming to us because human thinking, which is biological and is very abstract - machines cannot even achieve it. So the new employee teams, the new HR will be about how can we make people more creative, because we need that kind of wild neoteny around because the computational thing is done by machines, we don't need to worry about them. And then lastly is, AI needs to come, not just to the big multinationals, but also to SMEs. Small companies will benefit so much if some of their strategies or systems were empowered by AI, they will save costs, etc, etc. So those are the four things that I currently work on in the Juubei, which is a global country member agency that came out of the G7, and the OECD, but also for the British government, for the European Union. These are the areas, it really is.

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BH: So you talked about SMEs, medium sized businesses. Isn't that what a lot of the public cloud providers have already democratized, that they've made some of these really complex machine learning platforms and AI platforms available for almost anybody to use. I mean, it pretty much is anyone to be able to use those.

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IM: Yeah, because those are generic systems, you know, and thank God – like, plug and play, which is great. This is what everybody wants. Now you need to create competitive attributes in order to compete, right? What most people don't realize is that attributes are advantages intrinsic to you and only you because of; oh, you happen to be in a country where English is the language, or in a country of 300 million people, like things that - it just happened. We're here and we're going to benefit from this. And then what people need to know is that AI is like a building block system. If you have some generic platform, you can build customized solutions intrinsic to yourself, to make your products even more special or even better and more competitive - to leverage from all the other attributes that you are. And that is where the next five years are going to be, in terms of defining the marketplace. Very clever product approaches, very clever business models. You see, this is what the humans create - not an AI system, you know, going for a platform as a service or, for example, Volkswagen leasing all the electric cars like transportation as a service, that was created by someone in the finance department that I know - it wasn't an AI system. So it's really a decade where clever, imaginative management, strategy teams, people are going to come up with really clever stuff to transform the competition in the marketplace and obviously using AI as a tool, as a competitive tool.

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BH: On a previous episode, we had Tom Gruber join us, and Tom led the team that implemented Siri for the company that originally built Siri. And one of the things he talks about was that AI gives us a new kind of super power to see ourselves and can predict disruptions in cognitive and mental health, because we were talking about the ethics of AI. What's your view on the ethics of AI, and how it can be used for good and bad?

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IM: I always have this magical formula, which is, whatever you put out there in the world has to be for the highest benefit of everyone concerned. You know, it's not just about 'I'm selling products', but today, companies have a responsibility to contribute to the welfare of society. So you cannot just launch things and then, fingers crossed, ten years later, they find you out. Do you know who I'm talking about, right? Exactly. That mentality no longer cuts it. You cannot do that anymore. So first of all, your customers will be horrified. You would lose them and then you would have lots of lawsuits. So it doesn't pay off. That's why if you are going to use technology and AI to create products and services to really help your clients, it's not about selling stuff. It's like, how can I help my client achieve their goals with what I sell to them? If it's silver, if it's hardware, whatever it is, that's the mentality. So it's a purpose more than a sales strategy. And then because you hopefully want to be in the market for many, many years doing the great work that you do, there is a social responsibility about your actions. So we are entering into an era where ethics and responsibility and accountability and the purpose of companies are going to be part of the, you know, the stakes that they're going to be measured against.

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BH: Yeah, I'm just not sure that the ethics are quite - we haven't built the framework of ethics yet for these AI applications, and that's the biggest challenge at the moment, isn't it?

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IM: Well, that's what I'm working on. For example, when the EU published the first draft of the directive, there was a lot of debate as to how do you define ethics? How do you define what's good and what's bad? I've always advocated for, you know, it's all about the outcome. I can create a wonderful browser where people will find all the websites in the world. Fantastic invention. But if, all of a sudden, I start putting ads that drive people to bet their entire salaries in bingos, that's not that great. So for me, it's very easy to see.

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BH: Yeah. Well, thank you Inma, for joining us on today's Tech Reimagined, and the chance to pick your brain about some of the benefits and challenges around AI and machine learning and how we can make people's lives better, really. Really enjoyed that conversation. To all of our listeners, I really hope that you enjoyed this episode of Tech Reimagined, and thank you for joining us today. If you like today's topic, show us some love by hitting that subscribe button. Don't forget to tune in next week for the latest episode of the podcast. If you have any further questions or want to reach out to any of us, then you can drop us a line at endava.com or message us on all the major social media platforms. I'm Bradley Howard. This has been Tech Reimagined. Until next time.