

The Role of AI Reimagined – Part 2

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BRADLEY HOWARD (BH): Welcome back to Tech Reimagined where I'm joined by Radu and Boris. In this next part, we'll discuss more about our guest's career paths, projects that they've worked on, and advice they'd like to give to those with an interest in AI.

Radu, do you want to talk to us a bit about your career history?

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RADU ORGHIDAN (RO): I graduated Technical University in Cluj, and I felt like Romania is too monotonous, so I decided to go abroad and see how other people are doing. So, I went, and I pursued a PhD in Girona near Barcelona in Spain, where I learned about computer vision. And I returned after some years with the idea that computer vision could change the world. But not very clear how to apply it in business. So, I started my own start-up, Technical One, trying to understand how business is working alongside research and, basically, that's the story of my life. I've been all the time jumping from research to business, and business to research trying to figure out how we can find the relation between the two.

And the cherry on the cake was an MBA that I was lucky enough to follow in Cluj, and the University of Hull, in the UK, and that's where I got the idea of how to find out the abstract concepts that are behind the two and trying to mingle research and business so that we benefit both worlds.

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(BH): Well, thank you very much and welcome to the show. And Boris?

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BORIS CERGOL (BC): Hi Bradley, it's good to be back on the show. So, I'll start maybe a bit earlier on, earlier in my career, if I call it like that, then Radu. So, actually, my undergraduate study was in mathematics, and so, the reason why I pursued that was that very early on, I was very fascinated by technology that can, you know, change our lives a lot in a rather short period of time. So, I remember very well when I got my first computer, and it definitely is a point in life when I can say this is my life before I got it, and my life after I got it.

But in the 90s it was not, to me at least, then not really clear what that transformative technology should be. And so, I decided to pursue mathematics as a kind of a good general background for different things. But then, later on, I gravitated more and more to technologies that deal with data, so I've done a PhD in mathematical statistics, and then was looking for good applications in business.

The first area that I set out was developing systematic trading strategies, so I'm also using machine learning, I do say that I feel now with the historical perspective that this is one of the maybe worse areas to apply AI algorithms to, but nevertheless, I've learned a lot from it. I spent some time working in, as a kind of a researcher, in a brokerage house, but later on, I started my start-up company that was focusing on helping other businesses implement AI systems. And that was really great because I had an opportunity to work with businesses doing very different things in many different verticals.

But early last year I made a switch to a much larger business when I joined Comtrade Digital Services, and of course, now I'm part of an even larger organisation, and I have to say, no regrets.

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(BH): Excellent, and welcome to the show as well, and obviously, welcome to Endava too.

(BC): Thank you.

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(BH): So, Radu, what are some of the highest impact themes that has happened to AI in the last year?

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(RO): Oh, last year was very fruitful from the AI output point of view. I think the highlights of the year were GPT3 and AlphaFold, the two very famous models that appeared and looked like science fiction, even for us, that are in the field.

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(BH): And what do you think 2021 has in store for us?

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(RO): As it started, it was going to be quite an interesting year I think, from many points of view. And regarding AI, I think that this whole progress is building up with an exponential speed towards amazing applications. I couldn't name one in particular, but I think in the language processing and in the computer vision field, there is a lot of room to get near to the human capabilities.

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(BH): And Boris, what inspires you the most about working in AI?

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(BC): Yeah, so one thing I really love about it is that it's a technology that can really be used in so many different areas. I like the aspect of, you know, being able to make kind of deep dives into different types of problems that then can be solved with AI. Also, of course, the speed with which the progress is happening in recent years is quite inspiring for me personally, the idea that, you know, two years from now actually, we will be working on totally different things while still calling them AI, I guess, yeah, this is quite inspiring.

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(BH): And which of your strengths helped you when it comes to taking on a new AI project, let's start with you Radu?

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(RO): I have to be always open and curious. If there is this genuine interest in understanding the problem, and seeing the different ways of solving it, I think that's the key for finding really good solutions and really good approaches to anything. And maybe this comes from the PhD years, in which I had to solve really strange problems, and then starting from there, I figured out that there is almost nothing impossible.

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(BH): And Boris?

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(BC): One thing I would say is that I'm not a person who really grows too attached to maybe a certain approach, or a certain algorithm, which I think that seems the field is changing so quickly it's a good new kind of property to have. Also, I think that I've learned this through many mistakes is maybe how to talk to clients about AI without trying to overwhelm them with unnecessary, you know, technical details.

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(BH): And Radu, how do you think that working in AI has changed between you starting your career and the work that you're doing today?

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(RO): It changed quite a lot. First of all, we didn't know that we were doing AI, back in 2011, I published an article in which I was using machine learning without even knowing that its called machine learning. So, I've seen a maturity of the field that is amazing, and sometimes I also say like a famous YouTuber that's following papers, what a time to be alive. Because they are really tools that we thought were never, I mean I thought I wouldn't dream about, and they are now available, and make our work so much easier. So, I think from the start until now, everything is falling into place, and it's smoothing out our way towards pushing the field even further.

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(BH): And do you think that's a good thing, or do you think that creates challenges further down the line? One of the discussions we often have is that we used to understand at the processor level what was happening in computer science, but now there are so many different abstraction layers above that, that now, as you said earlier, you can just start with a credit card and suddenly you've got an AI console in front of you. Do you think that's good for today's graduates, or creates challenges?

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(RO): I think it's both good and bad, of course, the good part is that you don't have to carry on the technical debt that you're building if you're building everything from scratch yourself. So, now we have tools that are validated by large communities of users that you know they'll simply work. But then, on the other hand, they lose the ability to see, to understand the details, and we all face this opacity of the AI models. So, that's pretty bad.

So, I think in some sense we should study the basics, understand them, and look in the future and know where we want to go, and try to leverage all the tools that we have at hand in order to go there without keeping, without forgetting where we started from.

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(BH): And Boris, how do you think that working in AI has changed between you starting in your career and today?

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(BC): Yeah, so, first of all, it was the type of problems that were being and are being solved, so when I started out, most of the work was being done on kind of structure data so, you know, tabular type of data that most businesses have in databases, now it's broadened a lot to things that include natural language, images, even robotics, which is great. Also, like Radu mentioned, the tools really got better, so I think with the tools getting better what happened was that the focus shifted a lot from, you know, maybe developing specific algorithms or, you know, implementing those algorithms as such, towards more engineering knowledge.

So, basically knowing how to put the different already developed systems together and make sure that they are working correctly.

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(BH): And same with you Boris, what advice do you have for someone interested in the field of AI?

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(BC): First of all, I mean if this is, you know, maybe someone who is still in their undergraduate studies, or maybe thinking of starting them. I really think it's well worth for them to come as soon as possible to a point where they're actually learning about AI from the papers. Simply because this is, you know, practically the only way how to really keep up with where the field is currently, and for someone early on, it's important to not maybe learn approaches that aren't actually being used any longer. And on the other hand, for basically all the rest of the people interested in the field, I think there is a lot of really great resources online, so MOC courses that basically enable you to get a grasp of the field, at least to a certain extent.

And it is really useful, I mean, even if you are in a role that's not directly specialising in algorithms, having an understanding of AI today is just as important as, you know, having an understanding about the internet in maybe 1995, I think.

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(BH): Do you have any specific blogs or podcasts that you recommend that people should follow?

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(BC): Regarding the online courses, I would definitely recommend the courses from Andrew Ng on Coursera, I think they are good. For maybe less technical people there's this course elements of AI that was made in Finland and is meant to give kind of a broad overview of AI. Otherwise like I think as Radu mentioned in the previous episode, the podcasts by Lex Friedman are really excellent to not only get to know some technical things about the field, but also, a bit about the personalities of people working with AI.

And one thing that I find quite useful in order to keep track of the field is various newsletters like, you know, Deep Learning Weekly, AI Weekly, I mean it's not hard to find them, you know, and just Googling for AI newsletters I'm sure people will be able to find a lot of them.

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(BH): And Radu, how about yourself, what advice do you have for people who want to get into this field?

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(RO): I think that the basic tools are very important to give you confidence that you can build solutions, so they should start from really from scratch, like using Jupiter Notebooks and using all those libraries that help them analyse data, use models, build models and evaluate them. And in the same time, they should also keep an eye on the future by looking, by reading papers and understanding where the technology goes. And an example of a YouTube channel that I think is quite revealing, and I like a lot, is Two Minutes Paper where there are these guys that present interesting AI related papers in really easy to understand way.

And with visual results. So, if you see where the field is going, and you see how to do this, I think you have both the purpose and the tools to go in that direction.

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(BC): Maybe just I would like to add one resource, which is quite good, I think it's a website called Papers with Code, that basically collects all the repositories that are, of culture repositories that are linked to new papers coming out related to AI.

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(RO): That's a very good one.

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(BC): It's, I think it's a good way to maybe, for someone to start tinkering with the models and code that is developed by others, in order to get better at it themselves.

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(RO): Yeah, that's a very good resource, and also, of course, Kaggle. Kaggle is an excellent way to start and participate into competitions and get access to data sets, see how other people are building solutions, that's an excellent community.

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(BH): Oh, thank you for that. And finally, certainly in the UK we've gone back into a national lockdown, how are you both coping in lockdown, have you got any top tips, whether that involves artificial intelligence or not. Radu, do you want to go first?

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(RO): I'm using artificial intelligence of my Garmin watch to follow me on the streets and tell me my heart rate, and that I'm lazy, or I should run faster or slower. So, I think that's a really good tip, it helped me get running more seriously, and by running I get my mental calm that I need for staying long hours in front of the computer. And then, lockdown I see mostly beneficial, because I can stay more with my family, I can work in a more flexible way. And while I'm looking forward to seeing my colleagues again, I'm not complaining a lot about this situation, I think you can take advantage of it.

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(BH): That's very philosophical. And Boris?

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(BC): Yeah, I think I've adapted quite well to the situation, you know, based on that, that I wasn't a very outdoorsy person to begin with. So, I've come to realise that if we had to spend 10 years in a bunker without windows, I think I would be able to cope quite well with it, as long as I would have internet. But it was also a kind of a period for maybe some self-reflection, and definitely I think that people who have, in these times, a type of work that they can do very efficiently from home, this is, and that actually we have a lot of work to do, it's something to be really grateful for.

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(BH): Thank you Radu and Boris for sharing more insights with us. After talking to both of you, I'm excited about the future of AI, and how it can change our lives. Listeners, if you have any more questions that you'd like Radu and Boris to answer, please send them to us a podcast@endava.com. And also, don't forget to like and subscribe for more episodes of Tech Reimagined, thank you Boris and Radu.



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(BC): Thank you for inviting me.

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(RO): Thank you.