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Firstly, Robert Kötter, we have you today with us discussing on one of the important topics in today's time, which is making researchers ready for the future. And you being one of the co-founders of Twenty One Skills skills, which is working and striving really hard to make researchers life easy and making them, you know, efficient enough and being ready for the future. It's happy to have you here.

It's an honor, honestly. Thank you so much for inviting me. I'm really looking forward to this.

Definitely. So coming to the main topic of our conversation today, for what we've met, I would like to first begin with addressing the main challenge. That is the research landscape is transforming at an unprecedented pace that we all are aware of, driven by rapid technological advancements and a growing recognition of the value in interdisciplinary collaboration.

In this era of constant disruption, the skills that have traditionally defined a successful researcher are no longer sufficient. I believe, and I hope you also agree to what I'm saying. Researchers are used to juggle between different things and work on several other things, even if they're transitioning from academia to industry.

And people are not really aware as to how much time have they spent in the lab or what kind of work they've done. It's the skills or the way that they have transitioned or the kind of transferable skills that they bring to the new job, let's say, is something that somehow researchers sometimes lack probably in terms because they're so used to working in silos, generally working at your own labs, doing your own research and not really having to socialize with people, let's say, which also kind of hinders just for some researchers, it is more academic collaboration than otherwise. So another major hurdle that I see researchers stumbling over is when they transition from academia to industry.

Right? The skills and mindsets that make someone a stellar academic don't always translate seamlessly to corporate R D environments. Let's say companies move at a totally different pace. This emphasis on rapid iteration, getting M MVPs out the door and clear ROIS researchers and ROIS is not what they are looking for is results and not ROIS in general.

So how do you how would you say that a researcher must smoothly for them to smoothly transition from academia to industry? What kind of skills are a must when it comes to this transition when this shift is to is about to take care. What do you think about that? That's a really interesting field and I can see that this is something a lot of researchers struggle with. Again, to make it more specific, like I'm Quite active on LinkedIn giving advice for researchers in upskilling and in future skills.

And the highest performing posts that like really go viral are the ones on career transition. So like just today I wrote about, you know, creating an industry CV from an academic cv. One of the biggest, you know, it's a very different format of course, but one of the biggest struggles that researchers have, and I think they, they really need support with this, is to understand how much skill they actually have and how much value they can bring to the companies that they go to.

Because the, the two codes and the two in the two workplaces are so different seemingly that a lot of people, for example, to make it very specific, do not mention their teaching experience. And if they do, they just write teaching experience on the industry cv. But that's actually not the skill that's behind it.

You know, if you're teaching students, you know, that's actually both project management, you know, it's leading a number of people to a goal which would be the exam at the end of the semester, you know, and you can actually quantify this. And industry always likes, you know, skills that can be quantified. So it's really about thinking, you know, what's the skill behind my academic endeavors? You know, getting a paper out with 10 collaborators from eight institutions is a great skill, but it's not about the paper, nobody cares about the paper and industry.

But the value you bring to that specific workplace of collaboration, of great communication, of teamwork without disciplinary functions. These are the amazing skills that people look for. Because in the long run, I think what we're seeing right now is that most academic workplaces are more and more becoming like industry workplaces.

They start to run agile, they start to use technology, they're becoming much, much more adept at working transnationally and working in very tight budget lines. So there's a lot of things that are actually very applicable, but people in research very often don't see it. So my specific advice is expose yourself more to the different systems do collapse, not only with people from science, but also with people from industry, from non profit sector, from, from organizations, from state run and nation run institutions.

This will broaden your perspective. You will understand more what kind of value you bring. And it's about networking as well, right? So as a successful academic, you need these deep networks into the different fields because the sectors will work together, be it bringing humans to Mars or be it creating a new rice plant that's more resilient to climate change.

You know, this cannot be done in one lab anymore. You know, this needs to be an endeavor by different sectors and you can greatly benefit academically but also career wise. Absolutely.

The point that you made that, you know, collaborating and networking is one of the key areas that we should, especially being researchers and building a professional network is really important outside of academia as well. It is essential for guidance, mentorship, and even job opportunities for that matter. Researchers should, in my opinion, also proactively seek out industry focused trainings and certifications or opportunities to gain hands on experience and experience exposure like you've mentioned as well.

Additionally, a researcher should consider building a diverse skill set that caters to both academic and industry settings. Now, for example, this may include project management, which pretty much every researcher does themselves. Developing a business acumen is also very essential for researchers if they're transitioning from, from an academic setting to an industry based setting.

And one of the most important things also I believe is they do come with a lot of intellectual quotient, they do come with a lot of processes in their mind. And understanding the comprehensive power of a researcher is pretty commendable in general. But they also need to develop certain communication skills so that the way they have been presenting or conveying the message of their research for so long should also kind of translate into the kind of delegations that they do in industry.

So these are certain important skills as well that we would, you know, hope for researchers to build and upskill themselves with. Now, speaking of networking that we've already spoken and we also mentioned that how researchers are generally used to, you know, working in silos and you know, often tend to just collaborate on for their academic proposals or for research or whatever. But in today's time, given the diverse expertise that everybody has, it happens at the intersection of disciplines, by teams from different parts of the world coming together and working for, let's say, a very important cause, which is climate change, for example, we all are suffering with it.

In that sense, developing skills like emotional intelligence to navigate group dynamics becomes also essential for researchers who are living at two different parts of the world and being culturally what's. I can't seem to get the right word for it, but then culturally aware or culturally sensitive towards everybody who is working from different parts of the world. So what kind of things would you recommend or you know, in terms of having emotional intelligence and interpersonal skills, how would researchers kind of get into understanding that increasing empathy, conflict resolution and, you know, all these skills, how can they develop those? Yeah, these are great topics and I want to be again, quite specific.

So very often when a bigger institution or a trans national project asks us at 21 skills, you know, to support them in this endeavor of upskilling staff. What we propose is always a combination of, of measures. So we don't think like we can do it in the 20th century, just organize some workshops and everybody will be upskilling.

It's actually a transformation process and the upskilling has to be part of a bigger change that is changing the whole culture of the institution. And then we see a combination of digital, asynchronous upskilling. So everybody can do it in their own time, like watching Netflix, but just doing elearning.

Then we have digital life. So synchronous upskilling. So it's getting together in small bits and bytes, having experts from outside like us, or so using the own knowledge in the field, you know, that somebody who's a step ahead can pull the others with him or with her and teach them necessary skills in all these fields that you mentioned.

And then also in depth upskilling with really an expert in the field who can really give you feedback and tell you about it. And to align all these different measures and to create a feeling of upskilling. I think again, data driven.

It's very important to get a good understanding of where everyone is and where they want to go in terms of strengthening the strength. So you're great at project management to take it to the next level, do this certificate in maybe Kanban, or think about becoming a Scrum master, right? So this would be getting better at what you're already good at. Finding your weaknesses, like I said, looking at your fears, looking at the fears that you've been neglecting and really working on doing, doing this and getting a sense of accomplishment for this so that it's actually rewarded to upskill to showcase this.

And as you know from school, as I know from my own kids, it's very helpful if you learn something and then you teach it to others directly, you know, because by teaching you're actually upskilling strongly. So you know, that's more like a cascade that you get an expert in. They teach, say, leadership, and then the people there try to get this knowledge back to their peers and their members.

And by this you also break up the silos because in these upscaling formats, you will meet people from other disciplines, from other age groups, from other ranks. And this is really, really beneficial to create this kind of conversation, this kind of feeling in the whole institution that we are on a journey where upskilling is an essential part to solve the future problems that are coming that we cannot foresee right now. And it's also something we want to encourage because we want to encourage each individual's career choices.

Because in science we cannot always offer a distinct line like to a tenure trick position. There will be way more PhDs than there are postdocs and there will be even less leadership positions. So I think the upscaling is also a promise to the people.

If you are here, you're not only excel at research, but will also make you fit for other workplaces. And this has the additional benefit that I very often now hear that people go into industry for a few years and then miss academia and come back, but have all this knowledge of how, you know, cutthroat markets work, of how, you know, very constrained projects can be led to fruition and bring these skills back to the academic workplace that they appreciate for all it gave them before. You know, and I think we have to get into this mindset of being great workplaces and being great upskilling teachers for each other and then academia can thrive in the future.

Yes, a very valid point that you made, Robert. Like, while individual researchers are taking their steps in terms of upskilling themselves, it is also essential for our peers and you know, other, let's say our moderators or our supervisors to also take that initiative and you know, help us in upskilling each other as well. And, and in that sense, institutional support is also crucial in providing resources, training opportunities and an environment that encourages professional development as well.

Luckily, some institutions are starting to wake up to the importance of equipping researchers with these future proof skills, let's call them so. But many are still playing catch up, leaving their researchers a little exposed or you know, unaware of certain things, or maybe just sticking to academics and not really focusing on upskilling them. Most of their institutions are not even AI pro.

Some of their institutions have completely banned researchers from using AI. Absolutely same reaction. But it's, I don't know, it's kind of intimidating as well because these researchers could probably not would be a little away from actually catching up in the race where other researchers have already crossed the line.

So my advice for institutional support would be, you know, take ownership of some skill development for your researchers because in the end it is going to help the institution overall because all of us are going to upskill each other. We need to get proactive about learning AI, pushing ourselves into collaborative projects and you know, creating a more holistic environment for research and development, doing some, probably helping researchers of your institution get into industry internships. So, so that that transition if they may have to do from academia to inter to industry based sector, it could be a little easier for most of them.

Also sometimes I have noticed that, you know, it becomes difficult for researchers to take a choice later on because they are so used to the academic setting that it becomes very difficult for them. And then they are left in a puzzle where they do not know. Even after they complete their postdoc, they are still confused if they want to stick to academia or they want to get out of it.

So that is where, you know, all of these things. Some kind of institutional support could also help. So these were some of my thoughts in terms of, you know, avoiding, in terms of become for researchers to become obsolete in this drastically transforming landscape.

What would you want to add if you had to take a different, you know, call at it? What kind of support institutions play in upskilling their researchers? Yeah, so I, I see very often that in academia we have a kind of seniority leadership. So it's very often the more senior professors who become deans or who run whole institutions and, and they really struggle to understand the needs and the pain points of young researchers. There's a digital divide like you mentioned for sure.

But there's also a way of thinking that kind of like you have to be good in your research and this is what I did and I was successful. So you have to do it as well. And I see great dangers to this Uttkarsha and I'm sure you see it too because we are actually like every day we, the industry is talking to me and saying like, recommend me some researchers.

I want to hire them straight away because we are in need of smart people. We want young people who are very good in a field, who can, who can code, who can use AI, who can go really deep into a topic and who have this skill set. So it's like really skill based hiring.

And this is a great danger to academia if you're not opening up to this and understanding that you are not helping yourself. If you try to do it the old way right you as an institution and you have to really change the way academia is working and the way you're upskilling your people because otherwise they will be gone and they will earn much more money in industry. But as I mentioned at the beginning, they actually in there for the meaning of science, for solving problems, not for playing the political game, not for, you know, just putting a lot of profit or grants, you know, like into the university coffins or coffers or the industry coffers.

They really care about the science. So let them do it, but help them do it. And don't see the industry as your enemy.

See them as your partners. And if you really give people chances and you give them options and you, you really care about them, chances are the greatest minds will stick with you and they will see the advantages you give to them. But right now I see a big movement, especially in A.I.

like you mentioned, like really cool researchers who lay foundations for AI models. And then they get lured away because they, they get insane salaries in the industry. But after a year or so, they call me up and they say, I'm deeply unhappy.

This is all just a for profit business. I'm ethically concerned about this. I want to go back to academia.

But now because of the big differences of, of how they treat me as a, as a, you know, in terms of upskilling, in terms of benefits of money, it's just so unattractive to work for academia. And the institutions who really understand this, they really stand out and they are able to attract great talent, they give them great value. They will never pay the same as industry, but they will give them the chance to make a difference in the world.

And I think this is something like a, like a vision statement, a mission statement to understand who you are as an institution and what problems you solve. This is super attractive to retain talent. Yes, absolutely, Robert.

And I think by addressing these areas, it will help institutions themselves to empower researchers and help them stay ahead of the curve. Like you've said. Other two things, which I think most institutions should also do is offer certain workshops and seminars and training programs on emerging skills and technologies relevant not just to research, but overall transition and in terms of helping them in career progression as well, and not just sticking to academia.

Right. Also, another thing is when we talk about making them ready for the future, investing in state of the art technology and infrastructure to support the adoption of new research tools and methodologies. Also ensuring that everything is done ethically, responsibly and you know, without any issues happening around.

That's absolutely necessary right now. And it will definitely help in the entire profile of the institution as well as the researcher. Right.

And they will more meaningfully contribute to their fields, if I may say so. And everybody knows what they're getting into when they're, you know, getting admitted to an institution. But what goes beyond it is the kind of USP that you offer as an institute to your researchers.

How do you make them ready to get out in the industry and, you know, make a living for themselves, let's say the job market, we know it's pretty unstable at the moment. And, you know, researchers are finding it absolutely difficult to kind of survive. And then I think upskilling is the only way that they can.

That was a wonderful conversation, I believe. And we have pretty much been able to put forth our word in, you know, laying our message to every researcher out there. I believe at the end of the day, the research world is evolving at a blistering pace.

The skills that make a researcher successful won't cut anymore that did a few decades ago. Let's say adaptability, AI literacy, collaboration, and being industry savvy. These are just table stakes in let's call 2024.

And going forward, researchers who would want to cling to their old ways could find it difficult. But definitely it's in our hand to ensure that, you know, researchers are ready for the future by means of upskilling them and training them with the kind of help that we can offer to them. The people who will definitely embrace long life learning and continually upgrade their skill sets.

They'll probably the ones unlocking the next big breakthroughs that propel humanity forward, I believe so. The future belongs to the curious, the malleable, and the passionate ones. So it's for researchers to define for themselves if they are one of these and then take this step forward.

Right. That's so true. And I hope institutions as well as individuals heed this.

Is this advice? Yes. Yes, absolutely. I think it was wonderful having this conversation with you, Robert, and thank you so much for your time.

It was lovely. It was very educating for myself as well.