A1

And then you could introduce yourself.

I1

Right, but you’re recording this already, that's your problem, I have to tell you a bit of nonsense first. I think the term SHK is so great. I heard that the other day because we also work a lot with students and in our line of work it stands for sanitation, heating, air conditioning and I wasn't aware that it now also stands for student assistants. In my time, it was still called Hiwi.

A1

Oh, how good, I didn’t know that.

I1

Yes, yes. So a SHK-company, these are the ones that also install new heating systems or bathrooms or something like that.

A1

Well, XXX doesn't do that.

A4

Noo

I1

Okay yes, exactly. My name is XXX. I'll  tell you what I studied as well. I studied electrical engineering in XXX, but it's been a while now. I have been working at the company XXX in XXX for almost eight years now and have actually been involved with the topic of AI there for four and a half years. In short: I now lead a small team that has the task of looking at where we can use AI profitably in the company.

A1

Exactly. And that's also the contact through which we both somehow already know each other. We just have that as a background for you, not relevant for the study. For two and a half years, we have had a strategic partnership with XXX with us from XXX, where we, or rather from XXX, where we, the developers and people at XXX find out where AI can be used usefully and where a little more basic research can add more information. Exactly. Yes. Exactly, to clarify your background or context of AI. So, you have… you organize and coordinate AI projects in your company, right?

I1

You could say so, yes.

A1

And you also have a bit of technical understanding of AI and have already tried things yourself, right?

I1

In my studies, I programmed backpropagation in Python [inaudible]. I do have a technical background, but as you know, when you don’t do things for a few years, then of course you lose the tools of the trade.

A1

Yes, exactly, what are the challenges that you can think of, both in terms of your work and at XXX in general, where are the challenges in developing and providing AI products?

I1

So, a big challenge for us is the topic of infrastructure. So, how do I manage to bring the AI products, if I want to call them thatthat were maybe quickly put together in a notebook, how do I manage to bring them to the employees in a scalable and 24-7 running way with everything that goes with it. I think that's a big topic, and then, of course, how do I manage to get the employees on board so that they can really handle the new tools and use them profitably.

A1

When you say get employees on board, what do you mean by that?

I1

Yes, what we are seeing at the moment is that this is a major issue of change. New technologies, there is a whole range of points of view and on how to face them. From euphorically enthusiastic to rather skeptical. And of course, all of this is also represented in a company. You then have to react very differently, of course. But the goal should be to get everyone on board. In other words, to do educational work and also to train them so that they get the necessary skills to be able to deal with it.

A1

Yes, that's actually quite nice, because that's also one of the things that we've noticed again and again and one of the things that we had in our minds, in the approaches we've developed. And yes, XXXXXXXXX?

A2

Sorry to jump in here, I don't have such a techie background and you  just described quite nicely and also in detail in terms of challenges. Can you give an example on how something like this works in your company? So, let's say you want to implement something now, what are the steps you take? So that I can understand it better.

I1

I could go on and on about this topic. So, I'll say, everything starts with an idea. This means that when we approach an AI project, there is either, let's put it this way, the scenario that there is an idea to use a technology for a certain purpose. Or, that would be a bit of a technology push topic, or there is more of a business pull, I’ll call it that. That we see, okay, there is an existing business problem and AI could be a possible solution. So that's a bit of motivation to deal with a topic at all. Then we usually make sure that we have a, well, there are still various pre-evolutionary steps to validate such a topic even more and clarify key data again. That's when we usually enter a proof-of-concept phase. That means, we analyse the underlying data. We look at the technical feasibility. It’s a bit like in a laboratory scenario, maybe with a few assumptions or simplifications. And yes, if there are positive results, then we will see how to rationalize the whole topic. In other words, how do you create the assumptions or simplifications that you made at the beginning, how do we get rid of them? So how do we get a live data connection, for example? How can ML processes be set up (indistinctly)? And how do you actually embed this result, this AI tool, into the existing processes?

A2

Yes, definitely. I have to say, I really can't imagine what the processes are like. That was already very helpful. Do you have any specific questions about this?

A1

I don’t have any specific questions about that, but otherwise the question would of course be, you talked earlier about problems or the biggest challenges in somehow developing AI products and bringing them to the market. Do you also have any idea, if you had an idea, then you would probably have realized it, but do you have an idea what you could do methodically as a machine learner or AI researcher to somehow make your work easier at this point or to reduce the challenges a bit?

I1

Yes, difficult, because I see it a lot that these are actually IT topics. If you want to embed a new functionality that then includes AI into an existing software product, then there are always certain challenges. To make it a bit more concrete, if you look at Microsoft tools, for example, and you want to embed something that doesn't already exist, there might be the possibility to do something like this via plugins, in Outlook for example. Of course, we also work a lot with software that has been programmed especially for us by various service providers. This means that it goes via these service providers and then via many others again. That makes it more complicated. So I don't really see much that you could improve on the machine learning side. This is more of a topic for IT or for the companies or service providers that provide the tools.

A1

Yes, so the topic of operationalizability is just so difficult of course, if you are working on the fundamentals in some way or if you are working on individual models, then it's not necessarily possible to increase the operationalizability by here is a getting started and a readme and a GitHub repo. How the companies then embed this in their infrastructure is another matter entirely. Yes, but in terms of somehow getting people on board who may still be a bit critical of the technology or who could be left behind, maybe something in this area? Because that was the other challenge you mentioned.

I1

yes, definitely. I already mentioned it, right now I think we see that there is a great need for changes in working life. We need training for that, training for the employees and training in order to be authorized to hold training courses. Of course you need technical expertise, but less on the programming side or tool development side, but more on the training side.

A1

Yes, okay. That's good, now we've already talked about your background and your general concerns or views on the topic of AI, which is very helpful. Then we would now get into the main part of the study or the main component that we want to investigate in the study and for that I will actually share my screen now. Because we have seen all kinds of funny things but now you should see what I actually want to show you.

We have, or I have been dealing with it in my research for several years now, that AI labels can be generated in this way to communicate properties and characteristics of AI models. And without wanting to give you more information now, it would be good if you could tell us what you are seeing right now, how you perceive it, all the thoughts and first impressions you have about it

I1

Just like that now? Okay so the first thing I see is washing machine with the energy label. I mean I actually know the topic a little bit, XXXXXXX, through XXXXXX XXXXXXXXXXXXXX too. Yes so from the design I see this typical structure as it can now be found with all electronic products from refrigerators to washing machines. Now I see that this refers to a special model which is also mentioned above on a corresponding hardware. Then a few key figures that give me information about power draw, running time, corrupted robustness, I honestly don't know what that means. Accuracy is also specified, so the question is what it refers to. Yes, but first of all, I think the energy label is eye catching and with B I would interpret it as relatively good.

A1

Yes, exactly. Sure, you have a bit of background knowledge about it and in fact, everyone who does the study with us will have at least seen the homepage, where such a Label was already depicted on it. So it's not completely fresh, but of course you also want to tease people a bit about what we're working on. Of course, you saw the analogy to the energy labels completely right, that's also what it's based on, because I'm in the field of resource aware machine learning myself and the context of wanting to save energy somehow fit into it. Exactly. To what extent do you perhaps see a bridge to the challenges in the field of AI development that we talked about earlier?

I1

I would maybe divide this a bit at this point. On the one hand, and you have also divided it up a bit here, on the one hand we have the topic of energy or resource consumption and then on the other hand there is also an evaluation of this method of the algorithm and for me these are two different things with different significance for us and our use cases. I'm going to concentrate on the one where the quality of the algorithm is evaluated. That’s, of course, very interesting for us. If we want to apply an algorithm in the field of computer vision or another area, we wouldn’t have to search for 20, 50, or however many suitable ones. Instead, we’d get them prequalified, like a Top 5 selection, which would be very practical. Then you can start right away. That's the one thing. So it could simplify the development and prototyping. Now the second aspect, if I now talk about this energy label, for us the topic of sustainability is extremely important, yes, that is the central driver of our corporate strategy. So yes, by definition this is important. It's something we haven't really focused on in the past, because we always had the opinion that we don't want to limit ourselves technologically. Yes, because we believe that the best technologies will ultimately deliver the greatest added value, which will also contribute to our sustainability efforts. I still see it that way, which is interesting again, however, if we now had a case where AI is used, which is really scaled so high that it becomes really relevant and we then have the choice between different methods, then it is actually our task to include something like that and then decide accordingly for the most sustainable algorithm. Because this is actually also the requirement of our corporate strategy for all XXXX employees to include the topic of sustainability in every decision we make. In this respect, it is definitely an important and helpful tool.

A1

Ok. Yes, so the topic of sustainability or resource awareness, because sustainability does not only refer to resources, but of course it’s the main focus. As I said, it is also a central aspect in XXXXXXXXXXXXXXX and also in my research. And that's why it's so present on the label. In the end, the decision as to which model to use or which product to sell is always somehow a trade-off. So... how much quality, how much resource consumption, that's always a trade-off and that's exactly what we see on the labels here, that there is usually no one best model, but that there are different options. That's why I would actually move on to the second slide now. Exactly, instead of hard-to-understand papers or abstract implementations, practical properties of AI models can also be represented as a Label. That's a bit of the motivation or the idea behind it. And in our study, we want to find out, A, does this really have practical use for the industry or not? And B, in what form do you still get feedback from practice? Because from his research ivory tower, it is not necessarily certain that it is transparent, i.e. that you really know what is important and what is not. Here we have two labels next to each other. Can you also say a little something, react to it?

I1

Okay, it seems to be about two different algorithms from the same domain, so both in ImageNet, so computer vision methods. Now I see the worse... much worse energy label on the left, and also the details powerdraw per inference, where the unit is not the same, but about a factor or two and a half in between. But yes, the left one with a significantly longer running time is certainly correlated with the power or energy consumption. I think accuracy a bit difficult to interpret in the comparison. On the one hand, both test top one accuracy, the percentage value is slightly different, but the color is different too, so once red, once green. I would have thought that the left one has a better accuracy. The percentage is higher, but yes, it is not clear to me what it really says, so whether this is an accuracy or the other way around a mistake. Yes, these are my spontaneous impressions now.

A1

That means the mapping between color coding and numerical values is what confuses you a bit about the whole thing?

I1

So with this Accuracy... On the one hand, the label Test-Top-One-Accuracy. So maybe I misinterpreted it completely, but at first I thought, this means something like this is one of the top methods.

A1

Ah, yes.

I1

It may be that you mean it quite differently now, that it only refers to whether this is the test, the test scenario or something similar. Then this number, if this is really an accuracy, I always think it is a bit strange to specify a decimal number and then use percent as a unit. Then I'd rather have 60 or 63% and 81%. That would be easier for me to interpret. Then this color scaling would probably make more sense to me. Because whenever there is a decimal number, so 0 comma, I don't know what kind of value it is. Is that really percent or is there somehow an R-square or something else behind it?

A1

Yes, that's really helpful feedback actually. So of course we are already at a certain depth here, at a technical depth somehow. This is now going a bit in the direction of a user study on usability, which is not the main focus of the study, but of course still extremely helpful feedback.

To provide a little explanation. So, Test Top One in this case really just means that we look at the Top One Accuracy and that means just the normal Accuracy: Has the correct class been predicted? Exactly. For example, you could also look at the Top Five Accuracy, where you... so between the top five that the model recommends, is the right class among them? Then you would have a top five accuracy. Of course, it was born from the fact that these labels are generated fully automatically and I saved it in the software under this name. And that's definitely something that would have to be adapted, if you want to… so… it’s not a product that is already in use. That’s something, you always have to keep in mind that it was somehow developed from a researcher's point of view and not yet together with the company. But that's why it's just super helpful feedback. Exactly, so you can think of the floating-point numbers simply as percentage. So actually it's 81.2% accuracy and 63.2% accuracy for the other model. That means we got a 20% difference. The color coding is correct here because all color codes are created from all available information. That means we have all models, well not all models, we have tested a lot of models and then distributed the color scale over these results for each individual measured value. And that means that 63% is pretty much the worst result and 81% is pretty much the best result we had in our study. And it's the same with the other values. It might be that there are still models that are even better. And of course you could also choose a very, very bad model. ImageNet has about 1000 classes so if you choose a random model, which always randomly predicts a class, then you have a 0.1% accuracy. That would be the worst case.

I1

Yeah. When you explained it, I understood. But think about it again. The test top-one accuracy… with an explanation I understood, but at first glance it could be confusing.

A1

Yes of course… Very helpful feedback. Exactly. Now this is a form of communication or form of representation that is not actually in use. I mean, you've probably had a look at what model might be used, or you've had a look at some information about what model might somehow be applicable to our problem. That's kind of a hybrid thing we're working on. Of course, it is also interesting for us where there might still be opportunities for comparison. Can you think of other forms of representation or what resources would you use? So not the computing resources, but the information resources.

I1

To be honest, I think I'm a bit too far away from that topic. I rely on your or your expertise or on the expertise of my employees. Of course, what we have been noticing more and more recently is the whole thing in relation to the LLMs in particular, that there are various test scenarios with the leaderboards and how the models perform. That's something I'm already noticing because it is very present right now and I think it's very helpful. Probably especially in the open-source area, when the models are compared. But from the non-open-source models as well, which are also available in some benchmarks.

A1

Yes, that's totally right and I can imagine that this is an area where many people say they’re actually not that deep in the development process. That’s exactly why we thought about some possibilities. But of course, it is interesting to know if other people use them too or use different approaches. The first thing we came up with are scientific publications on Arxiv or other open source things. Then there are Model Cards, which are now often available by default on Hugging Face where, for example, many LLMs are also documented. Originally, this idea is from Google. Then, as you just mentioned, leaderboards or benchmarks or something similar, for example Papers with Code. Then, of course, there is an abundance of blog posts, for example on Towards Data Science. All the libraries that provide implementation in some way usually have their own documentation, for example at Keras. And IBM has, for example, factsheets, which are a bit similar to model cards. I'll send you the presentation afterwards so you can take another look if you want. There are hyperlinks behind everything. On the left is the classic paper about MobileNetV3. On the right is a part of the model card. Then there is Papers with Code, where, if you scroll down a bit, all papers that use this model are listed. Then there is a blog post about MobileNetV3 and everything you need to know. Then there is the documentation from Keras and, as I said, the factsheet from IBM, although it has to be mentioned here that IBM publishes these factsheets for their own open source products and models that they provide. Of course, MobileNet is not part of it. And apart from that, they have filed a patent for it. And if you go to IBM and ask them to create a model for us, they will of course be happy to make a factsheet, but this is not a presentation that is publicly available. Do you see, if you look at all these things now, any advantages, disadvantages, differences obviously you can see that at first glance, but do you have an assessment of how our labels might fit in?

I1

so without knowing that in detail, I think that the topic of resource consumption has probably not played a role previously. I can imagine that the inference time on different hardware or GPUs might already be mentioned but especially the topic of energy consumption, I would suspect, has not been a main topic yet. In addition, your form is very compact and really reduced to a few KPIs as it is designed to actually get all the information at a glance while the others provide more in-depth information. I can't say yet to what extent they are suitable for getting an impression at first glance.

A1

Yes, of course, that's the problem with a one-hour interview. We can't say: read this and then get back to us. But that's also the point, you don't always have the time to do that in real life.

I1

Exactly, I don't think I have any figures to prove my point, but I can imagine that the number of models is growing exponentially. So there is no way to really go into it in depth

A1

Yes, exactly. And also, I don't know if you noticed that, we didn’t mention it until now, we also have a small QR code on it here with Scan for Further Information. At the moment, this simply links to the page where the labels are created. Or rather, I think that this QR code even links to the MobileNet Paper, because that's the most official information. Exactly, but we also have the link to our framework on it so if you want to go into depth, you can do it. XXXXXXXXX, you want to say something?

A2

Yes, you just said that you suspect that energy and resource consumption is more present in the label than in the other representations.

 I was actually just wondering, maybe you have already mentioned it and I missed the information. What would be really important factors that you need? Because you just talked about resource consumption. What information are important to you?

I1

So for me, Resource consumption is rather secondary.

Because, as I said before, as a first step, I try to ensure that we do not limit ourselves technologically. I always start by using a sledgehammer to crack a nut, and then I see how small I can make the sledgehammer while still being able to crack the nut – to stay with the metaphor. So step 1 would always be the performance of the model but when I reach a point that is satisfactory, resource consumption becomes an important and interesting factor again. Then how do I manage to reduce my resource requirements? Everything with the underlying assumption that the running time is not a critical factor. If the running time is important for my application, you have to include it accordingly, of course. Then, that would be the driving factor rather than the actual resource requirement. Exactly, because as I said, I always approach it with the underlying motivation that I assume the model’s benefit produces more, I'll stick with the term, more sustainability, meaning that its effect is greater than the resources the AI model actually consumes.

A1

Yes, that makes total sense.

I can also tell you that this is definitely something that is currently quite hot in research. So actually, what you said earlier, that resource consumption is underrepresented by the others or is reported less, that is actually the case. I have noticed this very clearly in the last few years of my research. Of course, it is also the case that performance, quality and, in this context, of course, robustness are actually the top priorities for most business cases. Unless you have strong constraints, for example on running time or model size, if we talk about embedded devices. So if you want to run the whole thing on your mobile phone, then you have very clear constraints. One problem I noticed in our research and why the topic of resource consumption also plays a quite central role for us is that a lot of state-of-the-art improvement in research is actually: Let’s just use more GPUs to solve the problem! So the models are getting bigger and bigger, the data sets are getting more and more and in the end everyone says we have a new, best model. But if you look at the trade-off, then we can see they only improve by 5% even though they’re three times bigger in model size. And that may be valid, but you can also question it critically and say to yourself: hey, you have to understand this as a multidimensional or multi-objective if you want to find the best model. Right, so...

I1

Yes, I completely agree. I actually hope that most people agree that growing bigger and having more can still bring benefits, and that we may still be at a point on the curve where gains are achievable. But that's limited. I think this will only be possible through completely new approaches, then you will be able to make really big steps. Maybe also on the hardware side. On the whole topic of neurocomputing, I think that there is still a lot to be done, which will have a positive influence on both performance and energy requirements.

A1

Yes, that can definitely be the case. So of course, neurocomputing, quantum computing, there is a lot that is written in the stars that might help somehow. But as of now, LLMs are trained with the resource expenditure, which could supply a small town for a few months. It's just disclosed quite often.

This is often not reported or just swept under the carpet. That's why we always advocate communicating something like this more transparently. Exactly. But then I would now take the way back to the beginning of the interview, where you said that acceptance is a very big problem with this technology. Because there are actually people who are somehow critical of everything, and rightly so. In this context, do you still have any thoughts about the forms of representation that we have here now?

I1

Honestly not, because that's a bit too far apart for me. I think that the users I mentioned at the beginning, regular employees working with a tool that now suddenly includes AI, don’t need me to explain whether I’m using Random Forest X or Neural Network Y, along with everything that comes with it. They don't even notice that. That's also the difference to the washing machine analogy, where I, as a consumer, also make the decision to sell, they don't even notice that. So, they are not actually the addressees for this, but rather the developers, data scientists, whatever.

A1

but in this context, is it also a problem with developers, that they are critical of this technology, or if that's the target group, maybe that will help them?

I1

Well, I don't think we have a data scientist who is generally critical of AI in any way, then it might be the wrong job for them. No, but as I said, it helps. When there are more and more models, it is more and more difficult to keep track of everything. The more compact the better. But again, for me, as I said, in the first step the focus is actually on the model performance and then in the second step on factors such as running time or energy consumption. That's how I see it, yes, I haven't done enough research into this either, to be honest, how big the differences are now. I imagine that they are negligible with rather smaller models, than with LLMs. And we then also use them from OpenAI via Microsoft we get very precise insights into the CO2-equivalent emissions behind it, so the topic may then become relevant. But that is currently not considered or reported by us yet. I know very well that if we were to introduce these labels now, and we really follow suit, our cto would like that very much, because it fits very well into our corporate strategy. I could sell that very well, but I … or I don't know yet whether I really want to do that or if I’m kind of shooting myself in the foot with it, because then I wouldn’t be completely open to technology anymore and perhaps limit myself too much.

A1

Well, you must make some restrictions. For example, LLMs and language modeling, they only work with neural networks. So it is, no one would just come up with the idea of doing this with a linear regression. That doesn't work. Of course, there are models where these differences in runtime can be reduced, but if you look at the available LLMs, for example Microsoft, then you can say: okay, we might get a little bit better result and the answers are a bit more plausible, but the model is 10 times bigger. And you can look at that critically too. But in the end, of course, each company must decide for themself where its priorities lie, and that's good and right.

I1

Yes, I mean, with the LLMs, money is an important factor too.  But now it's...

A1

Their energy consumption is often covered by financial costs from rent or deployment, right?

I1

Exactly, so actually that should correlate. I can't confirm whether that's really the case. I only get a bit of insight from OpenAI and from how much we pay for the different models. The bigger the model, the more expensive. But with a strong development, the prices are going lower. I don't know whether this is due to the fact that there is also further optimization and in the end less energy is consumed.

A1

I think it's more due to the growing competition. So OpenAI has had a monopoly on it for a long time, but it feels like new LLMs from competitors are on the market every week or month. Some of them are open source, so the problem is that you have to host them yourself. But you can intercept that with AWS-instances or something like that and I think OpenAI is getting cheaper, so that they remain competitive and manage to sell their products. But I'm not sure about that either, I don't have that in-depth knowledge about it. I always deal with LLMs rather superficially. A big area, especially in research, is that many people are talking about certifying AI in a way. We now also have the AI Act, which obliges companies that develop AI to also examine and document their development and the development process and the products. This is legally binding, even if there are not yet many legal departments that specifically demand it. In this context… So, do you have any thoughts on that? Kind of certification, AI certification and then the form of representation that we talked about here.

I1

The AI Act is, of course, a well-known topic, even though we – or at least I – haven't yet investigated it in depth. However, I know that we will have to do so soon. So far, we haven’t really aligned our work with regulations. This might be different from highly regulated markets like the financial sector or the automotive industry, where such regulations naturally also apply to the use of AI. So far, this hasn’t been very prominent for us, but it will certainly become more relevant soon. And of course, everyone is grateful when this process is made easier. I know that there are already companies or startups like CertifieAI or something similar that have recognized this as a business model. And if this effort makes it easier, that’s obviously a huge benefit. So, if you were to add something here, like a label saying 'AI Act Compliant' or a similar certification—some kind of marking like 'This model is certified, this one is not'—that would be a significant advantage.

A1

Yes, so the problem at this point is that the AI Act is still very vague in many aspects. Above all, it often focuses only on the product idea and the manufacturing process of a product. Which model is actually used in the end is not what gets certified. Instead, the focus is on whether the decision-making process behind choosing the model is reasonable. This is a general problem in the industry: At what point do we actually call something AI? Is linear regression a statistical model, or does it already count as AI? There is a point where a model becomes so large and complex that people say, "Okay, this somehow seems intelligent." But there is no clear cut-off point that defines this. Exactly, so maybe as a background, as I said, we have all dealt with the trustworthiness of AI in different ways. XXXXX, do you want to say something about your paper from last year?

A2

I can do that. We investigated whether it makes a difference if models are AI-certified or not. Specifically, we compared how trustworthy people perceive certified models versus non-certified ones. Our results show that while certifications are important, they don’t really matter if the system itself has excellent performance. If people already know that a model works well, certification becomes less relevant. Of course, this was a vignette study. The participants didn’t have to make real decisions or interact with the system. The demand for certifications is there, and that makes sense. But the real question is whether it empirically makes a difference. That also aligns with what you already mentioned: Performance is the most important factor. The system needs to work and if that’s the case, everything else becomes secondary.

A1

That's why people board airplanes, it just works. Of course, there's a huge certification process behind it, yet a door can still fall off unexpectedly. Certification isn’t necessarily a guarantee for performance. But it's clear that this topic also comes up in the context of our labels, and we naturally keep trustworthiness in mind when thinking about labeling. This was also a major discussion point at last year’s conference where we met, because opinions on this vary a lot. Yeah, XXXXXXXXX.

A2

In that sense, what I’d be interested in now is: In our study, we also conducted qualitative research, we talked to people and asked how they perceive these things. One aspect that came up frequently was authorship, meaning, who is responsible for issuing such a certification. That was very important to many participants. Would you say that this is an important factor? We haven’t talked much about it yet, and I don’t want to ask in a leading way, but who, in your opinion, would be a trustworthy authority to issue an AI label? Not a certification, but an AI label. Who would you trust if they issued such a label?

I1

Yes, interesting question.

A2

You are welcome to say XXXXXXX now.

A1

You're probably pretty much alone with that statement. I think the majority of developers in Germany wouldn't just trust me.

A2

Now let's get away from the individual level.

I1

Yeah yeah sure.

A2

Because now you've seen such a label, and now you know what XXXXXXX developed, but that was a bit abstract. Exactly, what cues would be important for you?

I1

Well, it’s of course difficult with new, modern, and innovative topics like this. Otherwise, the usual suspects come to mind, like various TÜVs or DEKRA, or whatever, who are already involved with certifications. They naturally have a certain standing, but I’m not sure how much expertise they have in the field of AI or whether they could build it up with various teams. As I said, I believe there are also some startups in this area, where I would say, okay, they probably have the necessary know-how. But yes, do they also have the necessary processes and experience behind them? For me, there would always be a bit of uncertainty there. I mean, we all know enough scandals involving TÜV or similar organizations when looking at South America. But still, they do have a very good reputation. I think it would be difficult for a new, young company to quickly catch up in this regard.

A2

Yeah, so it's kind of reputation-based, yeah, yeah, that makes sense, we can definitely work with that. Cool, thanks.