Heart-a-Tech Podcast by MaibornWolff
Episode 04:

Prototyping in just 5 days:
Realize a Use Case Quickly and Effectively with LLM

With expert Emily Searle-White

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Intro Emily Searle-White: It's important to create an understanding of what these models can do, but also what they can't do and what they will and won't enable in the coming years. The models can't do everything and that's fine, but they can do some things really well and that's where we can benefit from.

Brigitte Streibich: Hello and welcome to a new episode of Heart-a-Tech, the podcast all about everything you need to know to successfully implement new AI trends and technologies in your business. This podcast is happily hosted by MaibornWolff. My name is Brigitte Streibich and today we're talking about "Prototyping in just five days: using LLM to quickly and effectively realize a use case". I have a very special guest with me in the studio today: Emily Searle-White. Emily grew up in the US, she's a mathematician and computer scientist, worked as a data engineer in the media industry for a few years, and is now part of the "Data & AI" team at MaibornWollf. Hello, Emily, welcome.

Emily Searle-White: Hello, thank you very much for having me!

Brigitte Streibich: Emily, when you think about your work and the topic "Heart-a-Tech": What makes your heart beat faster at work?

Emily Searle-White: Oh, that's a good question. I often find interfaces the most interesting. So now not in the traditional sense of software interfaces, but really where two fields meet. I find it very exciting to talk about people who are not particularly technical and about technical issues, or about two different data systems that then somehow come together. Old technologies and new ones - I find that particularly exciting.

Brigitte Streibich: That's a good transition, because when it comes to GPT, Large Language Models or artificial intelligence, you have to build interfaces at your customers. In companies, there may be departments or processes that have not communicated with each other before. Where do you start?

Emily Searle-White: What we find very helpful in our "Data & AI" area are data thinking workshops. That's where you sit down with different stakeholders - ideally people who have different roles in their team - to determine: What are the pain points right now? Which processes are not yet running optimally?

What could be improved there by means of data? It is precisely these different perspectives that are particularly important in order to be able to identify the problems well from all angles. And we would also carry out a "prototyping in five days" project. We would then start with data thinking and see: What are the use cases right now?

Brigitte Streibich: How can you imagine a "Data Thinking" workshop with your customers?

Emily Searle-White: It depends on our audience in the company. Are we talking to the entire company or just a specific team? A good group usually consists of four to eight people from the client, and we at MaibornWolff are usually two or maybe three, so that we can cover the different aspects. We have to keep the big picture in mind. On the customer side, we often have to deal with product owners who understand these processes well or can understand the pain points well. But of course we also keep an eye on the users, a particularly important perspective: We don't want to develop anything that doesn't help anyone.

Brigitte Streibich: Under what conditions can you conduct a "Data Thinking" workshop at all?

Emily Searle-White: Of course, it is an advantage if there is a certain data culture in a company. Or an understanding of what data is there. But we can also help develop that when in doubt. From a purely technical point of view, it is also helpful to already be on the move in the cloud, especially with technologies such as large language models. An openness to new things is a good prerequisite, I would say.

Brigitte Streibich: Azure and GPT are now also available in combination, i.e. GPT in the cloud. The question I'm asking myself now is: Why do we need you then? How can you help if companies are already working in that scenario anyway?

Emily Searle-White: Yeah, that's a very valid question. So just on Azure, because there are so many out-of-the-box solutions in terms of software-as-a-services that you can basically click together on the web interface itself. So why do you need developers? There are a couple of reasons. One is that it's our role to look very closely at all these new developments, what they do and what they don't do, and how we can use them. Whether they're helpful to our customers and also how much they cost. The other answer is: it's a bit like the last mile problem. You have to think of it like this: You take a bus and public transportation is basically great, but the last mile to your destination is always a bit of a hassle. And it's the same with custom software. So you can do a lot in Azure without having to start extra large development projects, but a precisely tailored solution to specific problem is with "Software as a Service" solutions.

That's where we come in with our experience. We are very familiar with the Microsoft tools. We also have projects that use Azure tools, and then again other projects where we take our homegrown architecture - our own tools. You can also work well with open source tools. We as experts just have to look: What really fits best for our customer's specific problem?

Brigitte Streibich: People often buy expensive tools in the hope that they can somehow manage it on their own. But at some point you realize that somehow it doesn't work. Because this "solution for all" just doesn't work for a particular company. When you have a problem like that, do you go into the companies and look individually?

Emily Searle-White: Exactly, and in the case that a perfect tool already exists for a problem, then we will also say that - but also if it would be more helpful in some places to develop something of our own.

Brigitte Streibich: Ideally, what does a positive result of such a thinking workshop look like? What does the customer walk away with?

Emily Searle-White: Ideally, on the first day, the customer has a concrete use case idea and new knowledge about what data they would need to provide to make it feasible in the end. Our customers then get an idea of the impact it will have on them if they adopt a use case and we prototype it for them. Right before prototyping, another very important step is data preparation, because often the data is not yet available in a way that you can get started right away. In this five-day cycle, we plan a full day for data preparation alone. In practice, this is the second day, followed by prototyping.

Brigitte Streibich: And how does that work?

Emily Searle-White: In prototyping, the goal is not to end up with a completely finished product that shines and is perfect all around. Prototyping is about good enough before perfect. That's sometimes very difficult, even for mathematicians like me, but that's simply important, that you move forward and ask yourself how you can really realize this idea. Of course, this thought process about feasibility also takes place during data thinking, but it's not until prototyping that you run into hurdles that you didn't even anticipate before. So we start with a basic infrastructure, and of course you can start with cloud tools like what's running on Azure. But the nice thing is that you can also simply start with our reference architecture if you don't want to use so many software-as-a-service services. The data has to be stored somewhere, and when it comes to large language models, it also has to be in a certain database or index so that it can be searched and addressed with Natural Language. And for that, you also have to have the corresponding model there so that you can address it at all. With the prototype, you want the parts to be able to communicate with each other, so that in the end you have something in your hand that you can feel what this tool can do. Even if it doesn't look as good yet or doesn't have an exciting interface or specific features, as you would naturally like to have in the future.

Brigitte Streibich: It often takes years to develop products to perfection. And now you just go and develop a prototype in five days that is not quite perfect, but theoretically almost marketable. Do you often encounter resistance in the companies? Don't you first have to open their minds to this new way of thinking?

Emily Searle-White: It's important to talk a lot with our customers so that everyone's expectations are clear - of a prototype, for example. Also, this idea of the typical waterfall process: we define everything perfectly and then it's going to run the same way. Of course,

that's a bit difficult in the agile world of software development. Sometimes you have to make a few compromises. We get along well with our customers and find nice solutions.

Brigitte Streibich: Do you have an example of a prototype that you have developed recently?

Emily Searle-White: With pleasure! I'm in a client project right now, so I won't comment on that for now. But on an internal research and development project at MaibornWolff, we wanted to make it easier for our employees to search our Confluence data. Anyone who has ever worked with Confluence knows that the search function is somewhat suboptimal - especially if you didn't enter any keywords when you created the pages. In the first draft, we had a data storage in the back in Azure, set up an index, addressed the models, and then showed it to our other team members in Data. And of course that's when the first comment came, "But that can't do what ChatGPT can do, that can now tell me what the weather is like in Munich." But that was not in the scope of our project. We actually only wanted it to be able to read our Conluence data, which means: expectation management is also very important. But of course there is now also the option of including so-called plug-ins in these models. For example, it would be possible to address current data and not just the old data, which is what this data was trained on.

Brigitte Streibich: Okay, exciting! What happens once a prototype has been defined after these five days? How does it go from prototype to production system?

Emily Searle-White: The advantage is that we are in the standard area of software engineering, with all the tools and skills that we already have there: Scrum, unit tests, scaling and cloud infrastructure - everything that we can already do at MaibornWolff, where many developers already have years of experience. That means we look at: How many users will actually work with it in the future? Do we need to scale up to ensure that the user experience remains as good as it is now? The question of what we do with data updates is very important to me personally. Let's take Confluence as a data source, for example: there are always new pages being added or edited. How do we take that into account? Do we want to do that daily or weekly? And what do we actually do with deleted data? How do we keep the data up to date? Originally, we had planned the project for R&D as a web app, that you could go to a website and enter the questions there. Until we realized: Wait a minute, we work with teams every day, so it would be quite helpful to just integrate that into teams. Then we adapted it accordingly.

Brigitte Streibich: So this very classic iterative process where you just release and see what comes back from your internal customers in this case and then see how you can develop it further.

Emily Searle-White: And especially in this field, it's important to do these iterations because there are always new tools coming to market. On Azure, new updates are released every week or so. So it's always important to see if that fits our case. Did we have a problem where we actually needed exactly that or is it not necessary to integrate that at the moment? And of course just being up to date with all the developments.

Brigitte Streibich: In terms of the biggest challenges or risks, how can clients best prepare to start a process with you?

Emily Searle-White: One risk is a certain fear of large language models. But there will be another podcast episode on that. But I think it's important to create an understanding of what these models can do, but also what they can't do, and what they will and won't enable in the next few years. In that way, you can take away some of the fears. The models can't do everything, and that's a good thing, but they can do some things really well, and we can benefit from that.

Brigitte Streibich: Many companies would like to start with GPT or LLMs, but they don't really know where to begin. At MaibornWolff, you also offer the opportunity to talk to an expert first. The expert can then see where to start in the process. Is it worthwhile to start prototyping directly or do we need a data thinking workshop first?

Emily Searle-White: Yes, exactly! We offer a no-obligation conversation by providing information on how companies can incorporate their data into an LLM. Or maybe companies already have ideas, but we don't know if they're right or if it's possible. So a conversation like that never hurts. But not only do we offer this five days, we also offer a two-day workshop. At the end of two days there is no prototype, but there you can work out the use cases a bit more precisely.

Brigitte Streibich: Well, we'll definitely put that in the show notes. Feel free to click and arrange a non-binding 30-minute meeting and then just see where you are with your company right now and what could help at that point. Emily, when you think about the future of GPG and LLMs, what would be your heart's desire or vision for the next five to ten years?

Emily Searle-White: A lot can happen in that time. As I said to myself, it's just these interfaces between people and between subject areas that are very important, and I think these models can help explain complex systems better. For example, developers can have the effect of a complicated code explained to them. But also summarizing documents and processes that are kind of described in text. And I think that will help us understand processes better. And we will understand where we are actually working too much. I think that's definitely possible. We probably don't need ten years for that, we can do it in five.

Brigitte Streibich: Then I have one last question for you: You told me in the preliminary interview that you really like listening to podcasts, about twelve different ones in fact. What can you recommend to me if I don't want to go into the topics of AI and GPT at all?

Emily Searle-White: I would definitely recommend the podcast "The Bechdel Cast". It's about movies and it's about testing whether movies pass the Bechdel test. For that, two characters in the movie have to be women, they have to have names, and they have to talk to each other. And what they talk about should not be a man.

Brigitte Streibich: Oh, interesting! Are there any films at all?

Emily Searle-White: You can make the test even harder and say that what they're talking about should also ideally advance the plot a little bit. So now not just ordering a coffee, but in that case more films fail. So it's a little bit difficult, but I think that's a very interesting podcast, also very wittily done.

Brigitte Streibich: Of course, you could also do that for books, but you would need an artificial intelligence to evaluate that. And with that, we say goodbye. Thank you very much for being with us, Emily.

Emily Searle-White: Thank you!