

Transcript: “Toward a digital companion: the culture of sign avatars”

Pathways to Zero Barriers Episode 3, Season 3

Introduction

Alex Le Peltier (00:00)

There's definitely a possible future where everyone has their own sign language companion and we get to a point where everything is accessible all the time. And even if you don't speak sign language, you can communicate through these digital avatars. And every organization should offer a sign language solution.

Judith Hermetter (00:23)

Welcome to Pathways to Zero Barriers. How do you get AI Sign Language Avatars right? In today's episode, we're diving into the details with Alex Le Peltier of Signapse. We'll be talking about quality, cultural nuances, capturing mood expressions, and a future where you can actually choose your own digital signer. Let's get started.

Tom Butcher (00:58)

Hello, my name is Tom Butcher with The Zero Project, and it's a delight to welcome you to our third season of Pathways to Zero Barriers podcasts. This season, we will be focusing on assistive technology innovation around the world. And I am very happy to be here today with Alex Le Peltier, who's in Wales and is Chief Technology Officer at Signapse.

Signapse is a company that specializes in leveraging cutting-edge technology to transform the way businesses communicate and collaborate. Alex, welcome. Great to have you here. I hope you're not deliquescing as I am here in Cleveland Heights.

Alex Le Peltier (01:44)

[Laughs] No, not at all. Thank you, Tom. It's great to be on the podcast. I'm looking forward to it. I think we've got lots to discuss. It's a really interesting space.

Tom Butcher (01:54)

I do as well. So, before we actually dive into our conversation, could you tell listeners a wee bit, not only about yourself, but about Signapse? That's before I fire away with my first question. So, a bit about yourself, Alex.

Alex Le Peltier (02:13)

Yeah. Well, thank you. As you said, I'm Alex Le Peltier. I'm Chief Technology Officer for Signapse and ultimately what's that... Well, that here, Signapse is a UK-based startup, which means I wear many, many different hats. So, I am the guy responsible for security. I'm also the guy responsible for all of the products that we build and basically taking the research that our research team creates and turning into things that benefit companies and the community at large. So that essentially, my day is nuanced every day. I spend time talking to customers. I spend time talking to community representatives. Spend time thinking about how can we make a difference with this amazing technology that we've created. And yeah, try and look at all the different applications that come from it.

So, a bit about Signapse. Signapse is a UK startup, as previously mentioned. We spun out of the University of Surrey four years ago, from a PhD thesis around how can we use generative AI to make the world more accessible. And that's where we are today. We're four years on and our mission is clear. It's to translate all the world's content into sign language. And we're on that path. It's still a long road ahead, but we're making really good progress. And I think there's benefits being seen already for lots of different people around the world, which is great.

Tom Butcher (03:44)

Great, thank you very much. That's a great intro. So, innovation. What is Signapse's innovation? And then... You've got the innovation. What problem is it seeking to solve? And then finally, how does it seek to solve that problem?

Alex Le Peltier (04:04)

Yeah, great. Great question. I think it's easy. Let's start with the problem. I think that's always the best place to start.

So, there are 70 million deaf people globally, as it currently stands. And that number is increasing. Every year that number increases and we live in a world where audio is the default, and at best you get offered captions. And that's not really good enough at the moment. It's... Captions don't solve the problem for deaf individuals. And the whole world

is based on audio, which means there's a massive gap to information being available with poor solutions solving it, and that's really where Signapse fits in. One of the key things that we always say is we're not a replacement for human interpreters. We are augmenting them.

So, there aren't enough interpreters, especially in the UK, but globally, there's just not enough interpreters. And interpreters should be freed up to focus on not unimportant things, but critical things. So, doctor's appointments, education, legal and court hearings. Situations where the accuracy of the translation is imperative. It is so important that your doctor's diagnosis is accurate rather than, say... Comparing it to a live event, for instance.

We also have the problem which we're trying to solve, which is, unfortunately, human interpreters are very expensive... You often have two, and in the UK, they're about 500 pounds a pop.

Tom Butcher (05:45)

Wow!

Alex Le Peltier (05:46)

Which means an event is paying a thousand pounds for interpreters. So, smaller events just don't do it. They'd rather go with the default option, which is "we will provide captions" and that is, this term, "good enough", which is not good enough, as it currently stands.

So, where Signaspe fits in is we've created a number of solutions using AI. Those solutions offer mass-market alternatives for media and entertainment, transportation, website translation, live events at a cheap price. We're not a replacement for human beings by any means, but what we can do is... We can be places where human beings can't be and we can offer a product to organizations that just wouldn't go with human translation either, so we really fit into that kind of niche gap, I suppose.

Tom Butcher (06:43)

Great! And then how do you do it?

Alex Le Peltier (06:47)

How do we do it. So we build it all in collaboration with the Deaf community. That's the most important thing for us. So, everything is done co-building, together. So, we run a series of events, we do Deaf-user-groups, where we go to Deaf schools and Deaf communities and Deaf festivals and events, and we get feedback from the Deaf

community on our products. Our AI models are also built by the Deaf community. So, when we are creating an AI model, and we can go into this in more detail later on around translation quality, but it's-

Tom Butcher (07:27)

That'd be great.

Alex Le Peltier (07:28)

It's really important that those models are made with videos from Deaf individuals. So, we've launched in the UK, we've recently launched in the US, and we're launching in Germany with DGS later this year as well. And in that process, we go to... We go to their country, we form connections with the Deaf community, we work with Deaf interpreters that come in and build out our models and our lexicon of our language, and we kind of keep this continuous cycle going.

So, we feed back into the Deaf community, the Deaf community feeds back into us. It's a symbiotic relationship and that's very important to us as a company. We don't want to be imposing technology on a nation. We don't want to be trying to say what is correct. All that information is given to us from the Deaf community and all of that... Information we've turned into a number of products.

So, we have an API, and some streaming services, which offers real-time translation. This really solves the live events piece and the live sports that for media and entertainment. We have a post-production product that you can go on you can upload any video and get it turned into sign language and where this is where the nuances of it comes in.

So, we don't want... We're very much aware that not everything should be done with AI. If you're doing a medical information video, for instance, or an education video, for instance, there's an element that needs to be quality controlled. And sometimes you just need human translations. We offer all of that out of the box for companies. So really, we're not, again, going back to that imposing piece. We're not imposing that everyone has to use AI because sometimes it doesn't work.

What we're offering is a catalogue of options where AI is the cheapest and human translation might be the most expensive, but we're offering that as a choice for people. We then also offer transportation products and we offer a website translation product where you just stick this little bot on your website and it will translate your whole website for you. Websites are another great example of like, content, that is really key, but is not

in an accessible format. Often there's also lots of business jargon and there's... You know, accessibility on the web is not always enforced. So this product solves that for members of the deaf community. You can choose whatever language you want it in, you can choose your signing speed. That has been built in tandem with the Deaf community for exactly what the Deaf community wants. So, it allows us to, yeah, build a really strong foundation kind of going forwards.

Tom Butcher (10:18)

Great. Thank you so much. I want to go back because I think some listeners might not really realise one of the kind of basic tenets and principles upon which you're working. And I think that's evidenced when you said captions are not good enough. For many people, they would think, "oh, yeah, you know, captions should be good enough". Could you just explain, or just give a little bit of a gloss on the fact that for many people in the community, sign language is their first language?

Alex Le Peltier (11:02)

Yeah, completely, completely. Like you said, a lot of the problem stems from how we teach reading, as well. It's a very auditory experience. You sound out the letters, you sound out the words. And unfortunately, we're in a situation where the average reading age in the UK is eight years old. Majority of people don't pass their GCSEs. Similar situation in the US, with a massive proportion of Deaf people struggling to pass their SATs. That leads to this scenario where, "when we have captions" just don't solve the problem. So, if we take news for example, if you're following it with captions, it could be a very complicated topic, it could be on elections, it could be on finances, or events that are happening globally, that information doesn't transfer over.

And the equivalent is if I'm English, if I was living in France and I had captions on in French, I could understand, but could I really comprehend what was going on? That's the difference. Whereas if the content was in English, or there were captions in English, or there was a dubbing in English, my understanding of the situation would be dramatically improved. It's the same thing for sign language. So, there's no reason why sign language shouldn't be an option with these. And we're working with a lot of industry partners to see how can we extend these video platforms and video services to when you go into subtitles, BSL, ASL and DGS are just options there and instead of captions appearing you get the sign avatar that appears over the top. It's your natural language at the end of the day and that's how it has to be. And at least in the UK, a lot of people who are deaf only speak sign language. And that's that's, that's a massive area that that people are

struggling to understand, so we approach it twofold, it's, it's the education piece around how like understanding that this this isn't good enough and it's not understandable, but then, also because we do sell to B2B as well, is then a piece of like, this is a whole demographic of people that you're missing out on for your product. So why would you not want to make inclusive? You offer adverts in Spanish and French, why not offer them in sign language too... Does that kind of clear things up for you?

Tom Butcher (13:30)

Yeah, absolutely and just... I just don't know, how many different sign languages are there, would you say?

Alex Le Peltier (13:42)

I think, I have to check this one, but I think there's about 350 sign languages globally.

Tom Butcher (13:49)

Oh! Good gracious!

Alex Le Peltier (13:50)

I think then you get into the whole world of regional slangs as well... So, this is a fun kind of story is... My wife speaks sign language, she learned in the west of the UK where, if anyone is in the UK, they are known for having a very heavy accent I learned-

Tom Butcher (14:10)

[laughs] Yeah, I know. I'm from Bath.

Alex Le Peltier (14:11)

I learned sign language in London, which is regarded as essentially the Queen's English of sign language. We do different signs for different words. So, she can't always understand what I'm signing and vice versa, just because of regional slang. So, you have different languages for different areas and you have regional slangs and we get to the world of like, wow.

Initially, maybe naively, I would go into Signapse and I think, "well, if you can do Spanish sign language you can then do Mexican, Chilean, Argentinian..." No. No, no, it's not how it works. It's... Every nation has their own sign languages... There is an international sign, but it's, you know, not widely adopted, although hopefully it's gaining some presence. But again, that's something we need to take into account.

And then if you take India, for instance, they've only just formalized their national sign language. There's still different sign languages per region. It's a very complicated problem to solve, a lot more than say spoken languages are, just because of the sheer diversity of it.

I also don't think Signapse will ever achieve all 350. We're aiming for our rollouts of languages, we're aiming for about 37 overall and based on social impact, kind of market availability and just... Yeah, real kind of drive there. So, take India, for instance, if we launched Indian Sign Language in the future, massive social impact. Lots of people in India don't have access to interpreters, but we do need them to decide on a national sign language first, I think, before we go in and do every single sign language in India.

Tom Butcher (15:58)

Yeah. Great. Thank you. And that probably leads to my next question, which is: how do you choose which languages you are going to put in order of priority for development at Signapse?

Alex Le Peltier (16:14)

It's something we've not truly cracked. I think, if I'm being honest, it's something that we... are working on heavily. So, we started with British Sign Language. We're a British company. It was a big market there. American Sign Language is relatively easy as the next one because there's a massive population of Deaf people in the States that need this service, and no one was really serving that. DGS, we are doing in partnership with a big German broadcaster, GML Systems House. They are... funding German Sign Language so they can use it in their products and within the wider German community to as it goes. So, it all very much depends.

We have... We do have a roadmap of where we think we'll be able to make the biggest impact going forward. And, like I said, it all depends on social impact and markets as well, because we are a company at the end of the day. But it's, yeah. That changes all the time. And I think somebody could come in knocking and say, we'd like to do Saudi sign language and we will fund it. And then that's a whole different conversation. But if nobody funded it, for instance, we do have a plan to kind of try and tackle 37 within the lifespan of Signapse, which hopefully will be very, very, very long and very, very fruitful.

But yeah, [laughs] it's a nice problem to solve, though. It's one of those, which is kind of like our vision as a company to translate all the world's content... It's hard. It's a hard one to achieve and it stretches us and it's like, it will make a difference if we do it, which is, I

suppose, it's something that I didn't really touch on when I was talking about myself is, I used to work in finance.

Tom Butcher (18:05)

Oh right!

Alex Le Peltier (18:06)

So, going from the world of finance where you're not making really much of a social impact to working for a company like Signapse, it really drills home how you are making a difference in the world, which is lovely.

Tom Butcher (18:18)

Oh, no, I know what that's like. I started life as a merchant banker in London in the 70s and after a number of years decided: "Ah, this is not what I want to do".

Let me come back to markets and landscapes and ask you... What is the market and landscape for these kinds of innovations in the area of sign language, but I'd like to associate it with the whole issue of collaborations and cooperations and associations that you might have. Because I was thinking, launching in various areas may quite often depend upon what kind of collaborations you have in those areas. Could you speak to all of those subjects? In whatever order you... In whatever order you would like!

Alex Le Peltier (19:28)

Yeah, of course, of course... I think one of the beautiful things about Signapse is, from a market's point of view, in a market's landscape point of view, we are very sector agnostic. So, because of the way that the technology has been built and, ultimately it is doing translation. Anything that has text or audio, we can translate. So that really opens up the whole world. But we are seeing the majority of our kind of new business in media and entertainment. Transportation is another area where we're seeing really big uptake. And that's also a great one because it has good social good as well.

So, on the partnership piece, for instance, we've just partnered with Amazon Prime to create the world's first translation rubric.

Tom Butcher (20:16)

Oh, congratulations.

Alex Le Peltier (20:19)

It was a big project.

Tom Butcher (20:20)

Yeah.

Alex Le Peltier (20:21)

But it was also interesting because we approached the problem and said, how do we benchmark if our sign language is any good? And no one knew. There was no one who created it. So, we worked with the University of Surrey, we worked with Amazon Prime, and now we've created this benchmark that we score, you know, we don't score super highly on. We don't score awfully on there either, but that's great. You know, it's an actual, it's a hard test that we know we can work towards to go forward. And it's also a test that everyone else in the industry can use as well to benchmark themselves against. So very, very important.

And we also just completed last year, we completed a proof of concept with British Airways, another partner of ours, where, if we take the problem that BA were facing, they have a number of Deaf passengers that fly every year with them. Those passengers need interpreters, which needs to be either provided by the airliner or provided by themselves. And airports... Are a really stressful environment. Even if you know what's going on.

Tom Butcher (21:26)

Are they not?

Alex Le Peltier (21:27)

There's so many people. All the announcements are audio-based or on their screens. If you miss it, it's gone. And especially flight. So, the proof of concept was at Heathrow Airport. So, it's a massive airport. We, over a space of a week, we translated 3000 flight announcements for BA. and that was beneficial for hearing people and Deaf people alike, but through that we essentially built screens around the airport. So, if your flight was cancelled, or your flight was delayed, or your flight was boarding, or it was the last call – you got those announcements in sign language as well as over the audio. We then took it one step further and we built a phone app which you could then use all the time. So, if you're on your way to the airport and your flight gets cancelled, you don't lose that information, it's available to you. So, it has a real social impact there with that partnership.

And then we also have partnerships with the community. Like I said before, we work really closely with lots of Deaf communities in the UK, EU and the US. It's something that

we want to grow as we kind of go forwards, really. Those community partnerships are so important for what we do. We always refer to it internally as the third stakeholder because although we're B2B as a company, we must always think about the end translation. Because ultimately, it will come back to bite us.

We could push out not very good translations and that might work for a year, but ultimately it's not going to be very good for the Deaf person at the end. And then we get a bad reputation and the company we're certain to get a bad reputation. No one wins in that. So, it's really important to us that: one, we're building things that people will use and two is linguistically correct. I think that's very interesting. And then the third side of it, the third influencing thing is the legislative piece.

So, some of your listeners may know about the EU Accessibility Act. I think it haunts some people's nightmares, but it's a dream. It's a dream for us at Signapse where the EU has mandated accessibility to the Deaf community, which is great. It's a great thing to do. And all of our EU customers are having to deal with this. And some of our US customers are selling to EU and having to deal with this. And what's great with where we're at, is because our solution is just so plug and play, our customers are now looking at like... We've got this solution and it works, but how do we go above the legislation now, like not just doing the bare minimum, like, how do we really offer a great experience for this demographic of people and we work with them to see and to explore the possibilities of that and to explore different ways that we can offer you know offer this so you know do we build applications with partners? Do we build website translations with partners? How do we get this product into as many people's hands as possible?

Tom Butcher (24:40)

Great, thank you. And then two totally disparate questions. The first is, do you have... competitors in the space or do you have other companies doing much the same with whom you collaborate so that you ensure that both or all of your products are of an equal calibre and standard?

Alex Le Peltier (25:04)

We do a bit of both, actually. We naturally have competitors. It's a growing market. We've got competitors more so in the US market than in the UK market, although there are competitors here.

Luckily, there is enough space for everyone, although we do compete. We recently, our co-founders, our founders went to a conference in Boston this year, to see around

cross... collaboration between companies and see how we're progressing forwards. And that was very successful. So, you know, we could share ideas. We can talk about how we can build this in tandem with the community because different companies have different approaches to that. How do we kind of do the other side of it? So Signapse is very good at the generative side of things, but we don't do the recognition side of it. And I think there's a general feeling within the whole community that to really work and make a difference is you should do both sides of things. So go to a coffee shop, one side is turning English into sign and one side is turning sign into English. How does that work? That's the ultimate solution of where we want to get to. But yeah, I think it's an interesting... We try and work with as many people as we can. We also do have to compete with some people too. I suppose it's not too dissimilar from the other side of AI. If you think of like the open AI, it's the anthropics of how it's like partly working together, but also partly competing with each other at the same time. But, ultimately, all trying to move towards the same goal, which we all have, which is really building something that serves this undervalued community.

Tom Butcher (26:51)

What are you doing which is different from what your competitors are doing?

Alex Le Peltier (26:56)

The main thing that we do that's different from our competitors is we offer photorealistic signers. So, our signers are all based off real people, or they're made to look like real people. All of our competitors offer either animation, or cartoony looking characters.

Tom Butcher (27:16)

Right.

Alex Le Peltier (27:17)

And we've, from our research, that's just not what the community is looking for. They're looking for a human feel, somebody that they can relate to, somebody that feels like they're a member of the Deaf community. And that's why we went down the photorealistic route.

Another thing that our competitors are doing is a lot of them use motion capture, which is fine. It works. That essentially means that they would stand in the spotty suits and they will record the signs. But that is very limited from our understanding that it doesn't learn. So where Signapse is different is we are building an AI model that learns and

understands the nuances of a conversation. So, sign language is complicated. If you take into account British Signapse, there's 25 signs for the color purple. We might not have number 23, but we might have number 22 and that will work. It might not be the best, but it will work. And as the models improve and as AI technology improves, we believe that, that will give us a big advantage against motion capture.

We are also the only company at the moment that can do true live translation. So, any live event, a podcast like this, for instance, we are, as it currently stands, the only company that can offer that in translation in real time. To 7 seconds at the moment by the end of the year we reckon we'll be about 3 seconds, maybe less, which is incredible when you think that...

Tom Butcher (28:48)

It's pretty, it's pretty cool.

Alex Le Peltier (28:50)

...Live TV has a 30-second buffer anyway, so yeah, exactly, it's pretty cool, it's pretty instantaneous. It makes a huge difference as well... But no one else can offer that... And no, no one else can offer the same scale that we can.

Also! And if you're looking at kind of the difference between Signapse and our competitors is... Some of our competitors can do one language. That's great. They're making a difference. Some of our competitors can do two languages. No one can do three languages. No one will be able to do four languages, five languages, six languages. And that's where Signapse really stands out is we can offer a variety of different languages. And now we're going to the same extent.

If you're a multinational company, for instance. Zero Project, for instance! You're going to have people in different parts of the world, you know, like you're in Cleveland, I'm in Wales and it's in theory we can offer... Well not a theory, we're doing it... We can offer if you're in the US you're going to get an ASL translation just by default, because you're in the US. If you're in the UK you're going to get a BSL translation, because you're in. If you're in Germany you're going to get a German translation. It's just natural at that point, you know. And we're the only company that can do that to the same extent that no matter what country you're in we'll try and match it to either the exact language that we support, or as close to... So as an example, if you're in Canada we don't support LSQ at the moment, but we do support ASL, and ASL is a big language in Canada still, so you'll get ASL, and then when we add LSQ, it'll be available for you, off you go!

Tom Butcher (30:28)

Yeah, great, and then two really... Simple questions, which is... How many of you are there at Signapse?

Alex Le Peltier (30:36)

There's about 20 of us now... I think. I would.... Yeah, we're a small, small but plucky company [laughs]. I think it's nice, yeah, it's a really good, good kind of vibe within the company. 50 percent of our staff are deaf. We always try and hire Deaf people as much as possible and we have Deaf members of staff in almost every key organizational department, I suppose, is probably the term, and that's great! And that really influences things.

In products and engineering there's six of us all kind of working towards the goal but it's nice. It's a very startupy-vibes, but yeah, everyone is very dedicated and brought into what we're trying to do. I think because we have a large proportion of Deaf staff it's really nice as well because they are our harshest critics, from the products that we build as well. Which means we can have lots of great debates internally, on like is this actually making a difference or is it not, and then taking those debates, building something and then taking it out to the wider community is also really good. Kind of, as we, we grow and again it's the co-building, the co-building piece that we're trying to trying to achieve.

Tom Butcher (31:55)

Absolutely... A fairly specific question... I'm going to preface it with a question, which is, you know, what do you see as the current trends, developments and indeed challenges for these types of solutions? But I got a particular case... I know that back in, I think it was, 2018, because of the difference in linguistic quality between humans and avatars, The World Federation of the Deaf and the World Association of Sign Language Interpreters cautioned against the use of signing avatars as a replacement for human signers. That's then. We're now eight years on. Has the situation changed?

Alex Le Peltier (32:49)

Yeah, I think a lot has changed in eight years. I think a lot has changed in eight months in this kind of AI hyperscaling phase where we're at as an industry. I think although a lot has changed from AI the core things around relationships and working closely with the community haven't changed and that's very important.

I think also if we look at, like, the 2018 report, one of the main things was cultural inappropriate machine outputs. So, you know not really representing the community where we're building, and we took that in the early stages of Signapse, we took that quite seriously. So that's the reason why our signers are entirely photorealistic, they are based on real people, or they're based on photorealistic generated people. And that depends on the culture again of where we're at.

If we take, If we take the UK, for instance, it's a very closely knit community. The preference there was to have a signer that everyone knew. So, we have Mars and we have Ray. Ray is based off our head of translation and Mars is based off Marcus, a member of our dev team. And that works really well for the UK.

But in the US, it's the opposite. The culture was "we don't actually want to be associated with a real person". "We'd rather it be more anonymous", I suppose? To an extent, it got to the level of really interesting debates on would... The culture was, well, are you happy with Mickey Mouse signing? And we go, well, are we okay with that as a company? And there's an argument either side of that, but that's okay, because that's just how it is in the States. So, we created what we call anonymous signers, which are photorealistic signers, Max and Jay. They're recorded by Elsie, who is our ASL interpreter behind the scenes, but essentially we reskin them to look photorealistic and they are completely synthetic.

So that's what the culture... Was preferred to out there, so, we've adapted to it... We're going through that process at the moment in Germany and we have... Our German interpreter is called Andreas, we're looking at whether we... Go down the digital signer route, or we go down the human route and that will very much be influenced by the German the DGS community, on what they prefer.

We also try and make... It sounds a bit far-fetched now, but it was a real problem back in 2018, is that all of the outputs were very monotone. They didn't represent the facial features of the community or the body builds, or skin color, or age, or just attitudes. Whereas now, our German signers look German. Our American signers look American. And our British signers look British. And that's expected. And that's how it should be.

We've also kind of taken it one step further now, where the technology exists that we can change facial structures and facial expressions based on the mood of the context of the sentence, so, you don't just have a signer that just looks very blank and very robotic all the time. Their eyes move and they have happy expressions and sad expressions, and it all goes to making them feel a bit more human in a way and a bit more relatable. We try

and avoid the uncanny valley, where maybe it looks a bit too weird and it takes a lot of skill from our research team to do that, but it's progress.

There are still things, though, that we need to work on. As a great example is: our models can't support complex role shift at the moment, which is a linguistical element in sign language, where you change your position of your signer based on who is talking and the context and placement, which is where you move things around the space to explain a space. Our models are 2D at the moment, so that's not... We can't do that, but that's something that we're working on in tandem with the community. Again, yeah, to, like: "does this work for you?", "is this if our if the site if you're talking?", "someone else was talking and the sign changes. Is that what you would do?". And those are the kind of questions that we're asking all the time. So, yeah, it's a balancing act for sure.

Tom Butcher (37:42)

Yeah, I bet. Two things. Could you please explain, because some listeners might not understand the concept of uncanny valley?

Alex Le Peltier (37:54)

[laughs] Yeah.

Tom Butcher (37:55)

And I think it's really important.

Alex Le Peltier (37:56)

Yeah. That might just be a British thing. I don't know.

Tom Butcher (38:00)

No, no, no.

Alex Le Peltier (38:02)

Uncanny Valley is this psychological effect where you look at something that's been digitally made, or just a situation where it looks just weird to the human brain. I think that's probably the best way to explain it. It's, you know, it's right but also not right, so... And it's really common with AI-generated images, where it's kind of close to the bone but something slightly off... And it's just not a nice experience for people to use and if we take sign language and we take Signapse as an example, it's... People are looking at our signers a lot, so they need to look realistic enough, but not too realistic in one way that it might make people...

Tom Butcher (38:51)

Uncomfy.

Alex Le Peltier (38:52)

Uncomfortable. Yeah, yeah, yeah, exactly. And how that kind of feels... So, it's, yeah, it's something that we try a lot of different versions of things to see: "how does this make you feel?" and "are you comfortable with this?". And sometimes we get it right, and sometimes we don't. Yeah. That is my understanding of the uncanny valley.

Tom Butcher (39:16)

Yeah. That, that's mine as well... And one of the things you say is that you work with the community and therefore you get your feedback and you can avoid the uncanny valley one. If one takes an analog one wonders how much the TV manufacturers spoke with the community when they tried to make 3D TVs, which made everybody feel sick. And so, I think that's just an example of working with the community. And, then, I just had one question on that, as well, when it comes to avatars. Are there any cultures that actually don't want a human face to be signing? I mean, yes, there has to be to a certain extent, but a culture where it is quite obvious that this is a model, you know... how to put it, it was kind of basically as if it was Bugs Bunny doing signage?

Alex Le Peltier (40:23)

Um, I think yes, and I think there's also a generational impact to take into account as well in that it's we... I suppose if you take Millennials up, the preference has always been human faces and human experience because that's what people know. If you look at younger generations where we live, in who have been influenced by the Internet and social media and TikTok, that's less of a requirement, from our research. They are absolutely fine with the idea that it wouldn't be a human being. It could be an M&M. It could be a character like Mickey Mouse. And that's okay. Because, if we take the M&M, for instance, as an example, if you're watching an M&M advert, the M&M is talking to you as a hearing person, so why would the M&M not be signing to you? And that's okay in certain cultures.

It's come up in our research in the US, for instance, it's come up in our research with younger generations. We're trying to reach as mass market as possible, so, we're not exploring that at the moment. It's always interesting to entertain the question of where do we go. And do we get to the point in the future of allowing people to choose their own signer and allowing people to, you know. Do you get to a point in the future where

everyone has their own digital companion, kind of following you around? I don't know, but it'll be interesting to see, especially when you take into account different, kind of... Some people are into skateboarding and some people are into heavy metal music. And how do we get, how do we build a solution that represents it?

It was really interesting as well, when we'd been talking to, kind of, the cinema industry, for instance, and the films. You don't want a happy-looking avatar if you're in a horror film. It would just take you completely out of the vibe. And I guess the same could be said for children's cartoons. If we took something like Inside Out, for instance, should the character be a human, or should the avatar be in fitting with the film? And that's kind of an interesting one to see where the industry goes and where we kind of come out on it. But yeah, the argument makes perfect sense that, really, sometimes you don't want to break that experience, especially if it's something like a film.

Tom Butcher (43:03)

Great. Thank you. And that brings us on to the whole aspect of AI and the speed of the development of AI. So, have you seen developments since you set up Signapse, that have been able to enable you to do things that you never imagined when you set up the company?

Alex Le Peltier (43:33)

Oh, loads, loads.

Tom Butcher (43:36)

[laughs] What do you think the biggest ones are?

Alex Le Peltier (43:39)

I think there's a few.

So, since we started Signapse, we were using a specific type of video model. It was perfectly fine. But if you look back on our website and our LinkedIn page, you can see the difference between version one and version two of the models. It's... The kind of rapid progress of video quality, that comes out is really interesting, especially when you look at the likes of Synthesia, for instance, and the avatars that they're creating for businesses and training. They look incredible and they give people an element of flexibility, and that all comes from diffusion models and all the research there, and how do we kind of do that. So, that's a game where we've had to go from "we are focusing linguistically perfect

and we're happy with the video generation” to “oh my gosh! The models are now a thousand times better. We need to adjust on that.”

I think also that, when we started, if we go back to that kind of roboticness, we did facial expressions, but they weren't amazing. And now, if you look at some of the facial expressions that we do, they're so much clearer. And that's through the diffusion model technology and our own custom models and how trying to... Capture as much of the context around the sentences through large language models as possible to basically all feed into this genre. So, we can make the person happy when it's happy and make them sad when it's sad. It's very interesting.

I think another market dynamic that we're seeing is the shift on cost. So, traditionally, accessibility content has been expensive because it's really mentally intensive, it's complicated for humans to do, you need to swap, like I said before you have to have two interpreters, you need to swap them out. That's solved by AI technology, where it is cheaper, it's considerably cheaper to use this technology to do translation. Which, again, unlocks a whole load of market from, and it changes the conversation from, “we can't afford this” to “why wouldn't we do this”, which is great. Now, it's like there is no real excuse to not offer any kind of accessibility, but specifically sign language accessibility, as an offering now and that.... Especially in the world of streaming and digital content.

I suppose the flip side to that is, because it's so cheap, that it opens up the door to bad actors who will ship poor-quality avatars, which will erode community trust and gives the whole industry a bad name. Which is why we spend so long building those bridges with the community, and we've done things like the Amazon Prime rubric and other things to build trust in the community that our models are as good as they can be, and we'll offer you what you need. But yeah, as with all new technology, there's always a good side and a bad side. We just think hopefully that the positives will outweigh the negatives that you, kind of, occasionally see.

So yeah, like a big piece of that is in Germany, for instance, at the moment. We are now working really hard with the community to show, “yeah, you have solutions in place at the moment, but... we can give you a solution that is custom for you and will solve the problems that you have”. “And if you're not happy with it, let us know and let's work together, and let's make something that does work”, rather than, like, the whole “buy our products and be done with you” kind of attitude.

Yeah, we very much want to move away from that. But yeah, and the technology changes every day, which means that we can offer a better service every day as well.

Tom Butcher (47:35)

And maybe... Looking back on what you've said. Maybe, as AI develops, your users will be able to tailor-make their, essentially, their app. How they want to do it, or how they want to see it on their screen.

Alex Le Peltier (47:54)

That's definitely a... There's definitely a possible future where everyone has their own sign language companion and we get to a point where everything is accessible all the time. And even if you don't speak sign language, you can communicate through these digital avatars. And every organization should offer a sign language solution, which is such an inspiring future to look forward to.

If it pulls off and it's not just on Signapse, it's going to be a whole community effort. But I think we can definitely get to a world where we really do bring down a lot of the barriers between the two. There's kind of this culture, this idea exists of two worlds: the hearing-world and the deaf-world. And in my mind, that should not be the case. We should all be living in the same world using technologies that are available to us to improve the life experiences of everybody. And I think that we're at a very exciting time to be able to do that and... Yeah, really drive that forwards.

Tom Butcher (49:06)

Yeah, great. Thank you so much. Alex, I'd like to sum up briefly our discussion. I think you've provided us with four really useful and practical takeaways from what you're doing. And you must tell me if I'm wrong, or I've missed bits out.

First, everything that you build at Signapse is done with the community. And that just demonstrates that co-creation is absolutely vital. Really, not only in what you do, but what everybody does in this field.

Then, second, the technology does exist, and as we've been discussing, it is becoming more and more sophisticated, more versatile, more flexible. It's being used. And quite obviously from what you're doing, it makes a difference. You're more likely to make your flight.

Then I think, which is really important, is that the solution that you're providing at Signapse complements interpreters; it does not replace them. It has its own niche.

And then finally, and I, I think this is really interesting about your organization, is that you recognize the importance of and are actively involved in building a world where everyone, and I really do mean everyone, can have the same access to information, which is vital for inclusion, equity, and equality.

Would, would you say that sums up what we've been talking about today? And please add or subtract whatever you should like.

Alex Le Peltier (51:07)

No, I think that that really hits the nail on the head.

I think one thing is to, kind of, think about... From our vision is, at the moment, yes, we only focus on the EU, US and UK markets, but we do take that mission of translating all digital content seriously. Especially when you think of 80 percent of Deaf people live in the developing world where access to interpreters is zero. And if you think of a technology like Signapse and the potential for social change that I could have in those nations is incredible. It's one of the main barriers that we're trying to overcome, is that access to information point and really bringing up the bar of equality.

And one thing I heard recently was, it was during the local elections in the UK, it was, could we, and this came from a Deaf user group, is... "Could we add Signapse to the BBC News app?" Because the news cycle was changing so quickly, they couldn't follow, or they struggled to follow what was going on. And this person wanted to vote and they were entitled to vote and they were entitled to choose the candidate that they wanted. But it was hard to understand the nuances of what was being discussed and understand, kind of, enough information to make their decision. And a product like Signapse really brings that bar, that kind of difference to zero, in that everyone will have the same information, can make the same decisions that they want. And really... Just be. Like you said – it improves equality throughout the world. And that's what we're trying to do.

Tom Butcher (52:45)

Yeah, absolutely. And then just a kind of nuts-and-bolts question when you were talking about just how many of the 80 percent. With Signapse, are the data upon which Signapse works kept on the web? Or, if I have a telephone, does it actually download the data that I need onto my phone, or my iPad, or whatever, so that I don't actually need to be connected to the internet?

Alex Le Peltier (53:24)

It very much depends on the partners and the product.

Tom Butcher (53:27)

Right.

Alex Le Peltier (53:28)

So, some of our partners are building offline applications that will do that. Some of our partners are online only. It's a very interesting kind of debate is, on one side, we want to offer it to people who can do offline all the time. But the other side is, the AI models are quite large. So, you don't want to then fill up somebody's phone.

Tom Butcher (53:53)

Yes, that's what I was thinking.

Alex Le Peltier (53:54)

So again, it's that, kind of, that balancing act. Majority of our stuff is online only, at the moment. But there's nothing to say that in the future, either through one of our partners, or directly through us, that we'd look to offer an offline solution as well. It all very much depends, again, on what the community is looking for, what markets we're going into. At the moment, the markets where we're at, there is decent 4G, 3G, 5G signal where an online application can still work majority of the time, but as we move into newer markets that might not be a possibility and we adapt. We adapt to it, as those, kind of, challenges come up.

Tom Butcher (54:37)

Yeah, I can imagine because that's really the only way you can do it. I'm not going to let you go without my... [laughs] I always ask people before they go, do you have... Or no, not do you have. What is your call to action to listeners? You've been able to impart to us so much knowledge, so much information. What call to action can they take away with them?

Alex Le Peltier (55:12)

I think, if your listeners can take away one thing, it's that this technology exists now. It's battle-hardened. It's working in production in the real world with different customers and different situations. And that there is just no excuse not to make your products, your live event, your transport, your network, your website, accessible to everyone anymore. The

solution is there, it's cost-effective and it scales and it works. And it's not a pipe dream anymore, around really breaking down those barriers and making everything accessible. It's real life. And it's here and it's available to use. So, if you can go away and think of a scenario where you want to make it more accessible, I guarantee you there's a solution out there for it.

Tom Butcher (56:03)

And I'm sure if I asked you, you know, “why are you doing what you are doing”? Your answer would be my answer, which is, “why wouldn't I”?

Alex Le Peltier (56:13)

Exactly. Yeah. Why wouldn't you? It's there. It's there to be used. There's no excuse anymore.

Tom Butcher (56:20)

Great. Alex, thank you once again for joining us and sharing with us not only your experiences, but also so much of your wisdom. It's been fascinating and I think incredibly inspiring.

Alex Le Peltier (56:33)

Thank you! It's been absolutely brilliant being part of the podcast.

Judith Hermetter (56:39)

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