

Philip D.:

Hello inclusion believers and welcome to The Access Champions podcast. I'm your host, Phil Dallmann, for this week's journey into the galaxies of accessibility, diversity and inclusion.

Philip D.:

We got another great episode for you guys this week. We are joined by Mike Veronis who is the Chief Revenue Officer of AppTek, which is company based out of Virginia that's been new and a lot of good work, as it relates to captioning, for a long, long time and they've been working with Gallaudet, as Mike will share some of the more finer details of that partnership. But they're really looking at how captioning besides or including rather, you know, content captioning, whether you know, your standard TV shows and things of that nature and news and things like that, but looking at sort of day to day captioning and the needs of the hearing loss community as it relates to that. So real interesting conversation and really excited to share it with you guys so we'll get to that in just a moment.

Philip D.:

I want to welcome an additional member of our team. It feels like we've been growing and evolving, especially over the last couple of weeks with Alie B. And Justin coming on board, but we've also added a new champion intern. His name is Jay Reid. He's an NYU student here in New York and he's going to be helping us out in a variety of ways, but this past week he did all the social media posts and so we're really grateful to have him on our team.

Philip D.:

Speaking of social media, if you don't already, make sure that you are following us. We're at Access Champion on Instagram and Twitter and The Access Champion podcast on Facebook. Connect with us, chat with us, interact with us, tag us in things that you think are interesting or that you think we might find interesting or articles or topics that you'd like us to highlight or guests you'd like us to consider having on the show. You know, we are open to those types of suggestions.

Philip D.:

And if you're not necessarily interested in doing that on social media, you can email us directly at accesschampion@gmail.com. That email goes directly to me and I'd love to chat with so many of you guys out there and you know, speaking of that email, that email can also be used if you are interested in helping advise us on our ASL videos or if you're interested in joining our advisory board. We're always looking to add to that group. It continues to grow and just a wonderful group of humans who guide us and share their experience with us as we continue to grow and try to become the most robust educational tool possible.

Philip D.:

So again, that's accesschampion@gmail.com. Use it for a lot of things. Hit us up. And now a quick word about Patreon.

Alex Delare:

Hi there. I'm Alex Delaire and I was on Phil Dallmann's Access Champions episode 80. I loved meeting Phil and sharing our stories about accessibility, inclusivity and MAC, or the Museum Arts and Culture Access Consortium together.

Alex Delare:

Did you realize that there's even more amazing Access Champion stories out there? I know. It's true. For just \$1 a month, you can get access to exclusive interviews, games, and soon even a book club. Oh, that sounds like fun.

Alex Delare:

In order to get all this access, please go to www.patreon.com/accesschampions and sign up. You can get all sorts of fabulous perks like awesome swag, on air shout outs and stickers. Who doesn't like stickers? Thank you for considering joining the team of inclusion warriors for only \$1 a month at www.patreon.com/accesschampions. We so appreciate your support.

Philip D.:

Thanks. We really appreciate that plug right there and again, it's \$1 a month, but if it's, you know, as a baseline, it's \$1 a month, for exclusive content and a sticker, but there are higher levels for different kinds of swag and shout outs and all of the things of that nature. But if that's not necessarily in your cards right now, that's fine. You can support us in another way by rating and reviewing us wherever you listen to the podcast, whether it's iTunes or Google play or Stitcher, where have you. Just hit us with that five star review and I think that's that.

Philip D.:

So without further ado, Access Champions, AppTek.

Philip D.:

All right. And we are here with Mike Veronis, the Chief Revenue Officer from AppTek. Thanks for taking the time to chat, Mike.

Mike V.:

Phillip, it's great to be here. Thank you for making time.

Philip D.:

So for our listeners who, listeners and readers, who may not be familiar, could you let us know a little bit about what AppTek is?

Mike V.:

AppTek is one of the earlier commercial language software companies. Our focus is artificial intelligence for neural machine translation and automatic speech recognition. So really multilingual text processing, multilingual speech recognition for transcription. And then lastly NLU, which is really the underlying meaning and semantics of language. And that's what we've been doing for the last 30 years.

Philip D.:

Oh wow. That's quite a long time in this game. You don't think about this kind of work happening 30 years ago. Oh, go ahead.

Mike V.:

No, I was just going to say, yeah, during the early times when the founders had the vision for the company, you know, there was no Siri, no Alexa, no Cortana, and so we were really pushing the boulder up hill trying to provide an automated capability well before its time.

Mike V.:

So where things are today is the result of a number of companies and experts and academicians and even the government working in this field to really bring automatic speech recognition, machine translation to the forefront. So we're really at a great time to be able to solve some problems and so happy to talk about that with you.

Philip D.:

Hard to imagine a time without Alexa telling me the weather every morning and showing me Instagram ads for things I didn't know I wanted. But that's fantastic. So obviously, the company involved evolved along the way. One of the things that, you know, as I did sort of a deep dive into your website. I'm a big fan and we talk a lot about on this show, not just doing something for the sake of doing it, but doing it because there is a need and it's being asked for.

Philip D.:

Can you share with us a little bit of the needs of the deaf and the hard of hearing community that sort of has guided you guys?

Mike V.:

Sure. So we've, in the closed captioning industry for some time, providing broadcasters and major content companies, your global news organizations, media monitoring capabilities, so live transcription, live captioning, subtitling. And that was mostly targeted at the commercial understanding of those applications.

Mike V.:

What I mean is, at that time, 15 years ago, we really even ourselves didn't have the full understanding of the deaf and hard of hearing communities needs. Over time, as we really got much deeper in the industry, we started to realize that there's an entire overlooked population of people. I mean, in the US alone, one in 20 are deaf or hard of hearing and how were their needs being served?

Mike V.:

So a couple of years ago we were fortunate enough to team with Gallaudet University here in DC and a program that is somewhat overseen by the FCC and their disability council to really look at the problems of that community relative to not only close captioning but ideally providing an equivalent experience to content and media for that community that hearing audiences have.

Mike V.:

And so, there are a lot of things for that audience that people often overlook and so think about some of the simplest examples. If you are on a bus and they're making announcements and you're deaf, how are you going to know what announcements that they're making, whether it's the next stop or that there's a traffic delay. Or if you're at the airport waiting for your flight and they announced that the gate has changed, how is somebody who is deaf or hard of hearing going to get that message? And that's

something that public facilities, public transportations, the airlines, are finally coming to the realization that they are not including the needs of the deaf and hard of hearing community in all that they do.

Mike V.:

So we've been able to look at that firsthand through working with that community, through focus groups, through this project with Gallaudet and it's really given us a new and critical perspective for what we're doing as a company and in our labs and with the technologies.

Philip D.:

So that's fantastic. And so it's, you know, it's going beyond media but the applications really in sort of a lot of everyday life type situations.

Mike V.:

Absolutely. Yeah. I mean, close captioning, first of all, many of us understand what closed captioning is in the broadcast content space.

Philip D.:

Right.

Mike V.:

But close captioning also has a place for, as we mentioned, captioning other parts of the daily life of anyone who is deaf or hard of hearing and this also means cross platforms. So it's your television, it's public access and displays, monitors, things of that nature. It's your iPhone. Wherever we the hearing community are and receive information is the same facility that the deaf and hard of hearing should have.

Philip D.:

Oh, yeah.

Mike V.:

And in terms of content and close captioning, the other thing that we've really learned and seen firsthand is that it's not just about providing lines of information but to make it an equivalent experience for everybody and that's key Philip, because why should the deaf or hard of hearing miss the question mark, the punctuation, the change in speaker, the timing, any of those things that makes you miss the point of the joke or makes you not be able to align what's being said with what's on screen. All of these things really take away the meaningfulness and the experience of content for the deaf or hard of hearing.

Philip D.:

It's interesting you say that. It was one of the first, when I first kind of dove into this field, one of the first things that I hadn't thought about as it came to capturing and I was dealing with open captioning at the time in a theatrical setting was the timing of punchlines.

Mike V.:

Sure.

Philip D.:

So that the person with hearing loss was laughing as close to as the same time as the rest of the audience and there wasn't a delay, which is, you know, you don't think about that. You think, Oh, we're providing access, we've got to get the text up there, but it's not an equitable experience if they're either behind or ahead of the folks consuming the product. So I think that's truly, that level of quality, attention to quality, is important.

Mike V.:

Absolutely.

Philip D.:

With all of the sort of, you know, we are in kind of a booming age of content out there across all different streaming platforms and new versions of cable it feels like, and add on, like I feel like every day I hear about some new platform that is putting content of some kind out there, whether it's scripted, unscripted, etcetera.

Philip D.:

How has sort of the technology and the research you guys are doing, how have you guys been navigating that?

Mike V.:

So one is 30 years in the business has provided us 30 years of experiences and data to train the ASR. Computing power has made a huge difference with GPUs and so the backbone of our speech recognition that the entire NLP platform, speech, text and NLU, is built to leverage the strength of GPU computing power for our neural network processing. So it's made the capability much stronger, much more viable for open language dialogue solutions. In other words, live captioning, to be able to understand context, to be able to anticipate the next word coming, so you get the right word, to understand where punctuation should go. Commas, question marks, exclamation marks. The ability to recognize speaker change, diazotization as it's known in the industry, so that you can, obviously, characterize on screen when different speakers are changing. And all of those things are made possible because of years of experience with the use cases, the training, the state of speech recognition software and the hardware.

Philip D.:

Mm-hmm (affirmative).

Mike V.:

So one, we are at a point where we've got a commercially viable solution to be able to apply to all of the digital media. But the other thing that we're also doing is we're working with the larger ecosystem in that closed captioning environment. So we're talking to the human captioning companies as well because this is also a great time for the man machine cooperation to really happen. And you've got a lot of pioneers by way of those captioning companies that started back in the 80s and 90s doing the manual captioning, closed captioning, of broadcast.

Mike V.:

So they bring a lot to the table and they fill in certain quality gaps that ASR doesn't, just as ASR fills in certain gaps that the humans can't maintain. And so we're looking at it both from a technical standpoint as well as practical implementation. How can we integrate with language service providers and their systems, the human captioning workflow, to in the end, respond to all of the issues that the deaf and hard of hearing community is talking about.

Philip D.:

I think that's really important that you, as you're describing all that, again, you come back to that touchstone of what is the community asking for, what do they need, and it's so important to go back to that. You know, as we're talking about ASR and then also the human aspect, what are some of the hurdles that using either/or or both sort of present?

Mike V.:

Yeah, sure. So from, I've talked about human and technology. So on the human perspective, let me just make the legal statement that we are not a human captioning company obviously, but we do measure ourselves as well as some of our customers, both in South America and Canada, measure us using the NER standards. So we're kind of aware of how all of us in the captioning industry, human and automated, are being evaluated and scored.

Mike V.:

So some of the things that are missing, in the human perspective, we can only listen so quickly. So if you have a fast speaker, missing words in captioning is sometimes an issue, trying to catch up with what's being said, and maybe getting the wrong word just so that you can keep up with the speed of captioning, is an issue.

Mike V.:

And so those are really just kind of human gaps, if you will, human nature, that sometimes cause an issue. So speed, acoustic capability, understanding of the domain.

Mike V.:

On the other side of the equation you've got ASR, which it's an always on 24/7 capability. It doesn't miss words. And that's sometimes an issue because it's too many words, but you'll never miss a word or omit a word. If it gets a word wrong, a human is often more correct than ASR, which is totally automated, and it sometimes can have a little bit more latency, a little bit longer by a second or two, because of ASR, because of all of that it's computing and trying to understand.

Mike V.:

So between the human captioners and the automated capability, there are some shortcomings that ultimately impact the deaf and hard of hearing. And one of the most significant things that we've heard from that community is when captions are such that they become frustrating for me to read, I just turn off the channel and that's a sad thing to hear because they're tuning out information, right?

Philip D.:

Mm-hmm (affirmative).

Mike V.:

So what we're trying to do is come up with that solution to that process between the captioners and the automated capability that we can provide that seamless quality captioning. So we get the punctuation, we get right words, we don't omit words, we don't add words, we're doing it on time. And so the challenge is really quite practical when you're trying to do it against, one broadcast is one thing, when you're trying to be able to do it against all available content, it's a huge issue.

Philip D.:

Yeah. But it sounds like, as you guys are moving forward, it's looking sort of in that vein of teamwork makes the dream work kind of way with between meeting in the middle with human captioning and ASR.

Mike V.:

Yeah, completely. I mean, there are applications where ASR alone is a great fit for things. News content, talk shows, other broadcast, religious broadcasts and other things. So that's where you have to decide where to best apply each solution to solve the overall problem. Sometimes it's totally automated ASR, sometimes it's human captioning, sometimes it's a blend. So again, we are trying to look at this from the big picture and solve a problem for that deaf community.

Philip D.:

Absolutely. So, I mean this is, you've given me a lot of this or a lot of the answer to this question. What are some of the highlights of what, you know, we have the Gallaudet partnership. What are some of the highlights of the other things that you guys are currently working on?

Mike V.:

So there are a few things. One of them is a very core foundational thing for automatic speech recognition, which is we are always trying to improve our word error rate, the WER, if you will, so that we can be that much more accurate in the output of our ASR, whether it's captioning, subtitling, just large scale transcription.

Mike V.:

The other thing that we're also working on in the labs, if you will, are capabilities for taking ASL, sign language, and automatically recognizing that and converting it to speech or text so that you can then deliver that to other digital platforms.

Mike V.:

We're also working on a smart glass solution for a couple of different applications. One of them being for a very practical use case, movie theaters. So not every movie theater have captions or provides closed captions to their movies. So for those audience members who would like it or need it to be captioned, we want to provide them capability through the smart glasses to be able to watch that movie and enable their own captioning.

Philip D.:

Yeah. And that's such an interesting thing that I was really just reading about recently of, and I guess I wasn't aware, I know that movies are required to provide a certain capturing by a certain time and what

have you, but I know some, I guess, it was Marlee Matlin who put it out there. I guess she was on a flight and there was no captioning for the movies on the flight.

Mike V.:

Right, right.

Philip D.:

And that's, again, I, and I'm in the industry, so I very rarely assume something is good to go, but I assumed that that was something we weren't working on anymore, but clearly it is. So you are right, there is definitely a need, and I had the privilege of trying out some smart glasses over the summer for capturing purposes and I thought, wow, this is, and you know, they fit actually quite nicely over my actual glasses.

Mike V.:

Yeah.

Philip D.:

So it was, that, I mean, that's always the thing that I am like, Oh, I don't know if I would like that because I have these glasses and what have you. But I thought, wow, what a great solution, specifically for either movies or live performance.

Mike V.:

Yeah, absolutely, Philip. And so we're still a bit away. The deaf and hard of hearing community is mixed on using those, as those are now becoming more mainstream. You've got other companies partnering with traditional eyewear makers like Ray-Ban and so forth to make them much more mainstream and integrate them into the way currently people live.

Mike V.:

So if you're already wearing glasses, you shouldn't have to have a different pair of glasses or they should be lightweight enough that they're not a burden to you as you put them into the public movie theater where they're not providing captions.

Mike V.:

So we're looking at those aspects and again, we've got the relationship with Gallaudet and that community where we're trying to, again, be inclusive of the communities needs at large, not just the granular provide close captioning to news.

Mike V.:

So there are a lot of things that we're working on and I'm happy to continue to keep in touch with you and maybe there are some future conversations you'd like to have, but we're trying to be more than just closed captioning.

Philip D.:

Well, it certainly sounds like it and I think that's very, very exciting. And like I said, I've said a couple of times here, I think the commitment to staying connected to the community and serving the community

is incredibly important. And I think that, you know, you guys been around 30 years, that's not easy. And in my opinion, again, when you start with the need and you start with listening to those who have the need, you set yourself up for success.

Philip D.:

I'll get you out of here on this. It's my favorite part of the show. It's a budget free dream your dreams, because we're not often always asked to look to the future and let our imaginations run wild. I'd love to hear what you hope for the future and you touched on a little bit there with what you guys are working on, but what you hope for the future of AppTek and what you hope for the future of sort of inclusion in general for the deaf and hard of hearing community?

Mike V.:

Sure. So a couple of things. First of all, on the regulatory side, Philip, we hope that the FCC will move forward in providing the industry, both the captioning, the technology industry, with even greater support so that we can create solutions because without standards, without access to data, without cooperation of government, there really will, there won't be full access to content and information and that equivalent experience, without that partnership between the regulatory bodies that can enforce that everybody work towards providing equal access to all.

Mike V.:

So that's one of our hopes and you know politics and it's not as easy, but I will tell you there are some amazing people at the FCC working on that issue so I'm not knocking them by any means. We're proud to be working with those folks.

Mike V.:

On the other wishlist dream side, it would be that everybody would have the easiest access to language capabilities, however they need to consume them. So whether it's through a hearing aid that you're already using, a cochlear implant, through the glasses that you're already wearing, in your car, whatever that capability is, it's really the universal access to information. Not so much the automatic speech recognition and the captioning, but an ecosystem that provides information to everybody in the digital world and that that comes much sooner rather than later, which again includes some standards, API, things of that nature, but where everybody, hearing, deaf, or hard of hearing, has equal access to information. That's the dream.

Philip D.:

I support that 100% and I think we are headed that way and I think it's folks like you and companies like AppTek that are going to help us get there. So thank you so much Mike for taking the time to chat. Thank you for all the work that you're doing. Thank you for all the work that AppTek is doing and thank you for being an access champion.

Mike V.:

Well, Philip and thank you for having this channel and this conversation. It was a pleasure.

Philip D.:

Thanks again to Mike for taking the time to chat and thank you to Jessica Foreman for coordinating the whole thing and getting us all the materials and such. Really, really appreciate it. I think it's very exciting stuff that they're doing and as you can hear in the interview, going about it the right way, making sure that they are connected with the community and doing things in step with the community rather than just deciding what's what and putting things out there that maybe aren't exactly what's needed. So kudos to you guys over there and we look forward to following your work.

Philip D.:

A reminder again, please consider supporting us on Patreon. There's exclusive content on there. Interviews, extended conversations, we're down the pike, about to release an extended conversation with Roger Dashi. I think that's going to be a really dope thing to share with you guys and I think you'll really enjoy it.

Philip D.:

But again, there it's \$1 a month as a baseline to get that and we also send you a sticker, which is really fun and I hope you'll consider supporting us. So that's patreon.com/accesschampions.

Philip D.:

As always, thank you to our executive producer Matt Kerstetter for making us sound great each and every single week. Thank you to our associate producer, the one and only Alie B. for everything that she does. Thank you to Justin Campbell for our artwork every single week. Thank you to Tommy Karr for our amazing logos. Thank you to Eric Walton and Austin Begley for all of the music heard on the show, and thank you to Jay Reid, our champion intern for all that he's doing. We'll be back again next week and remember inclusion believers, never stop running through that brick wall.