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Johan Rempel: Good morning, everyone. This is Johan Rempel from Center for Inclusive Design and Innovation at Georgia Tech.

Welcome to day 3 of the virtual ADA conference for state and local governments. Thank you for taking time out of your busy schedules to attend. If you attended any other sessions, these first few slides will be repetitive. For those attending for the first time these will be helpful housekeeping items. We're providing live captions for all of these sessions. A big thank you to Heather our captionist. We have provided two methods to access the captions. The first is through a StreamText link that opens up a third party application that will be shared in the chat. I believe it already has. It will be shared in a few more minutes for those arriving a few minutes later.

And then the second method is through the closed captions option on the toolbar itself on Zoom. On the screen is a bright red arrow pointing to the CC or closed captioning option on the toolbar. That's also easily navigability through a keyboard or screen reader by pressing the tab key. Then we also have our ASL interpreters. Thank you to Brenda and Mandie for providing ASL interpreting. They have been spotlighted. You should be seeing one of the ASL interpreters at all times. Spotlight is done by the host or cohost. There's also a way to pin individuals as well. Any participant can pin any other participant's video at any time and it only impacts that participants display. You hover over the participant you would like to pin, select the dot dot dot and then from the menu choose pin.

A few other housekeeping items here we have provided the Q&A option. If you wish to submit your questions, please do so through that.

We will leave time at the end to address any questions and we have a team working in the back ground with logistics that can answer questions in realtime as well. We have the chat and that's from a standpoint of over 1,000 people registering we have disabled for attendees but there's critical information shared through the chat. So keep your eyes on that as well.

And Amy is also going to be providing links to the presentation in realtime as well.

And then I wanted to mention also that for each of these sessions today as the last two days, we're going to be closing out Zoom entirely in order to prepare for the next session. So each and every presentation you'll need to log back in with that same link you have been using this entire time. This is being recorded and archived. You should have received the PowerPoints as accessible PDFs already. Those will also be made available and posted within the coming weeks. The PDFs, as well as an MP4 recording of each presentation, along with the full transcripts.

And I'm going to go ahead and start the recording in a moment.

And I'm going to pass this on to Barbara Tucker.

Barbara Tucker: I serve as the ADA administrative services coordinator for the State ADA Coordinator's Office. I will be your moderator for today. Welcome to session 3A entitled artificial intelligence, the hype and help for people with disabilities. Your presenters for today are Johan Rempel and Joe Dolson. Mr. Rempel is a quality assurance manager at the Center for Inclusive Design and Innovation, CIDI, at Georgia Tech. Mr. Rempel oversees digital accessibility and user experience initiatives. Including the AccessGA project. Johan back ground in disability and accessibility include education in a number of fields including certifications as assistive technology instructional specialist, vision rehabilitation therapist, certified professional in accessibility core competencies and user experience certification. Mr. Joe Dolson founded accessible website design. His clients include many accessibility focus non profit organizations. He is a specialist in WordPress accessibility and teaches a course at LinkedIn learning and creating accessible websites at WordPress. He's a core contributor to WordPress projects and helped to improve the accessibility in WordPress in countless ways since 2012. Joe has written and spoken widely on issues of content creation and accessibility. You can find their complete bios in the registration materials. Welcome Johan and Joe.

Johan Rempel: Thank you so much, Barbara. As the title suggests here the hype and help for people with disabilities is what we're going to be covered today. We're going to focus on how it can assist people with disabilities and keeping it real and addressing pain points along the way related to AI. We have a lot of material so we'll be moving quickly through this.

I did want to mention a couple of initiatives here one of them being AccessGA. We have worked very closely with the State ADA Coordinator's Office of Georgia and AccessGA is a brainchild of Galifinakis. AccessGA is a joint project of the Office State ADA Coordinator’s – Georgia State Financing and Investment Commission (GSFIC), Georgia Technology Authority (GTA) and Georgia Tech's Center for Inclusive Design & Innovation (CIDI) . AccessGA’s purpose is to support State of Georgia agencies with Information and Communication Technology (ICT) accessibility, promoting equal and timely access for employees and customers with a wide range of disabilities..

Under Stacey leadership this has been in place since 2012 and now under Stacey's leadership we have the honor of serving upwards of 40 state agencies within Georgia. So this relatively small contract has gone a long way to assisting with greater digital accessibility across Georgia.

And then very briefly related to Center for Inclusive Design and Innovation or CIDI. We're combining decades of service and research. CIDI's mission is to improve the human condition through equal access to technology based products and services for people with disabilities. We have one of the largest braille production services in the country that provide a variety of different formats of braille. We have a large e-text department as well that assists in remediation and trainings related to accessibility of various documentations. And we have our captioning and audio description services which part of which you are benefiting from today with Heather as our captionist.

And then Tools for Life is the assistive technology act within Georgia that is housed within CIDI. We're privileged to have Stacey Valrie Peace serve on the advisory council for Tools for Life. Once again there's a strong and effective collaboration with the State ADA Coordinator's Office in Georgia. And then best practice and user experience, we provide website and application evaluations and training. We have a robust research arm as well related to disability awareness and accessibility.

With that I will pass it on to my co presenter Joe Dolson.

Joe Dolson: Thank you very much, Johan. I greatly appreciate your introduction. Thanks for having me here for this event. I'm really excited to talk about this.

As Barbara said, I'm Joe Dolson. I'm a programmer and accessibility consultant and I combine those in my work with supporting the WordPress opensource product to make it more accessible. One of the key things I did was I included an image of myself and I provided the AI generated image description. "A person pointing at something" this is a starting point for our conversation. AI sometimes lacks for what an image is. I'm aware that it's a picture of me, Joe Dolson, presenting at a conference and stipulating in a moment of excitement. A person pointing at something is not sufficient.

So for today's agenda, we're going to be going through a number of things to describe what is AI and what is machine learning. We'll talk about common risks of AI. Johan will talk about the many ways in which we understand people with disabilities, we'll define people with disabilities, we'll talk about what benefits AI can have for people with disabilities. Some of the existing challenges for people with disabilities. Then we'll talk about policies and practices around AI and how we can remove barriers for people with disabilities. Finally, hopefully we'll have time for questions and answers from you the audience.

Next slide.

So first of all, what is AI and machine learning?

These two terms are commonly used very interchangeably. They do technically refer slightly to different parts of the process. AI or artificial intelligence refers to software that is able to emulate human thought and perform tasks using human input. You can ask it a question and it will attempt to give you an answer or you can provide an image and it will try to interpret it. Machine learning on the other hand is part of the mechanism of creating AI. It's the means by which that body of software learns information. So, the AI itself is the whole. Machine learning is a portion of the process to build it.

We need to define some terms so that we can have an effective conversation about this. First of all, the algorithm. An algorithm is a word that gets thrown around in software a lot. It's a set of introductions. In the context of artificial intelligence, it's a set of instructions intended to yield a specific output from an AI model.

Which leads us to model. The model is the part of the neural network that humans interact with. When using ChatGPT what you're doing is interacting with the model.

The neural network is a computer system that's modeled on the human brain. It is heavily interconnected and makes a lot of patterns evident in content that may otherwise be difficult to identify.

A large language model is a particular time of neural network. That's trained to predict likely text outputs from your human language input.

Another really key type of network is computer vision. This is specifically trained to analyze images and videos. This is what you're using when you use a tool that's intending to generate descriptions or alt text. Generative AI is a set of algorithms that is designed to create content. This is producing large bodies of text, it's producing new artwork or video.

Many of these types are fundamentally some form of generative AI because they are generating a response to your input. But that is in itself a whole class of artificial intelligence. Another key element is reinforced learning from human feedback, RLHF, this is a training tool of a neural network where humans analyze the output with the attempt to improve future iterations.

This can lead to interesting consequences. AI has accelerated recently. What this is referred to as the "deep learning era." It started around 2010. Around this time training compotation speeds started to double every 6 months, which was more than triple the previous pace. What this means is that we were going from a period where AI was just a marginal tool. It required incredible computing time to something that was more commercially available to the average person who could just open up a website and make use of it.

Techniques began to create nearly human levels in 2012 2017. GPT2.

And then between 2020 and 2022, large language model and the stable diffusion models have led to successful generative AI which is like the ChatGPT.

Since 2020 there's been expanded funding, research and marketing of AI that has created a "AI boom." Systems can now create images and text that are very similar to human creations.

What you're looking at on this screen and I will describe it in detail are a comparison of an image created using AI in 2014 verses an image created in 2024. The image on the left is the one from 2014. It is black and white, it's grainy, it's recognizable as a human face but if this was a photo of a real person you would be challenged to recognize them on the street later that day.

The image on the right created in 2024 is clear, sharp and realistic. It is clearly a man in his mid to late 40s b with salt and paper curly dark hair. If you saw this person you would be able to recognize them. It is a very life like image.

So that change is an enormous boom in what AI can accomplish. This is evidence of exactly what we're talking about in how it has changed.

So how did we get there? What are the parts of these large language model that are being put together? Training data. For any language model to work, it needs an enormous quantity of data that it can use to answer questions.

This answer is categorized by human beings so it is usable by the algorithm. The data can come from all sorts of locations. It might be public data that is gathered from the web or public records. An example is Google's search AI which is largely built on public data. It's largely the same data they use for Google search tools in general. Another example would be private data, information that's privately controlled. Corporate sales data that is generally secure.

These data sets may contain bias by design or by circumstance. They may be missing or include information that is intentionally fictional or questionable.

With that training data, information is passed into an algorithm. That algorithm is the instructions to interpret the data. There are multiple types of algorithm. 3 types are supervised which is data that has been built. Let's imagine you're giving this algorithm a set of integers. Each number is labeled odd or even. If you give the data set of 24, 42, 64 as even. And I have others labeled as odd, AI will learn very little from that because the data set is so small. It may come to the conclusion that all numbers containing a 4 are even and all numbers containing a 7 are odd because we have created a mismatched pattern. This is a risk of all algorithms is that you need enormous datasets to cover enough cases. Obviously we would not choose to use artificial intelligence to analyze integers. There are better tools for that but that's an example of how that can work.

Unsupervised algorithm uses unlabeled data. That's intended to use for discovery. And then reinforcement algorithms which learn from user feedback.

Once this has been built together we start to create our model. This is what people will interact with. This model receives input and draws conclusions or performance actions based on the pattern you've given it, the information you put in how that correlates to the data it was trained on. So essentially if you give it in the prior example another number it will look at the numbers it already has and say this looks like that so I think this is odd.

This very simplistic model is the basic concept of how these models are working.

Models frequently use multiple algorithms. ChatGPT starts with a supervised learning phase and then using a reinforcement phase. You'll notice this if you interact with ChatGPT. You'll notice it uses your earlier prompts and helps it use answers for your later prompts. Which can be good or bad if you are actually staying on the same a topic. If you're changing topics, you want to refresh and start a new session because it might mix in old data.

So what is the data's source. Web based has a high risk of AI generated content which can lead to model collapse. The more AI generated data is in the set, the less reliable the responses get. This seems predictable because fundamentally this is data built on imaginary information. What the AI has created itself is a whole different type of pattern.

So, companies are experimenting with trying to use synthetic data, AI created data, to teach AI and this has been proven to be difficult. The reason is the challenges in getting large data sets that are accurate and valuable. As far as I know this has not been particularly successful yet because of the risk of model collapse.

What happens if sensitive data goes into a tool using reinforcement algorithm or in the initial training data? Sensitive data might be something like private corporate information. What if a user accidentally types their account information into ChatGPT. Has it now learned this data? Might it spit this out to another user? These are risks. Recently the productivity tool Slack announced a use of AI in their tooling. This immediately raised concerns about private corporate data because these internal conversation tools are heavily used for sharing internal information. Training datasets are very large and difficult to manually check.

Next slide.

The next question is what bias are already in your data? They may contain unintended biases with surprising results. For example, a couple of examples in the context of trying to diagnose skin cancers. The first one is an example making AI work for people of color diagnosing melanoma and other skin cancers. It was an AI tool with significant problems because the training dataset was almost entirely pale skin and not accurate when attempting to diagnose darker skin. The second example is even sillier. What this determined was in their dataset images that contained rulers were judged to be cancerous. The reason was because in the data set all the images that were cancerous contained a ruler for diagnostics. The images that did not have cancer didn't include a ruler because they weren't trying to assess the spread and scope of the legion. So the AI learned something that was not quite true.

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An additional problem is who owns this data?

There's a great article from spectrum at the IEEE about the fact that a lot of the public training datasets have massive licensing errors. They are filled with copyrighted materials that they don't have the rights to use. So what happens with that content? What happens when it's used to create new information? How do the creators of that get credited if somebody uses ChatGPT to generate a story in the style of their writing when there was no rights granted for this?

It's well known that the major tech companies have cut corners on this. The second article "how tech giants cut corners to harvest data for AI" is about how they cut corners because they were in a race to generate these AI tooling.

So these are big risks. Where did this content come from? What happens if somebody asks their tool to create an image in the style of a living artist and that can only be done if this has been trained on that artist's work. If that artist isn't getting credited or given permission for that then this is damaging to their livelihood and their appearance in society as a creator.

So this is a major issue with training data and AI.

With all of this stuff put together, finally you're interacting with this large language model. The way you interact with it is via a prompt. Prompts can do all sorts of different things. Prompt is your instruction to the model that will then take in and interpret using its algorithm. That can be kind type of media it might be text, image or video. Those prompts can be detailed. You can write very long prompts to get very specific responses back or you can write a very short general prompt if you're trying to do something broad.

Essentially every prompt is a program that you're writing in natural human language and is being interpreted by that computer. They can have different intents. They can be intended to analyze, create or answer a question.

The detail level of the prompt is going to heavily shape what that language model produces. This is very different when talking about something like ChatGPT verses DALL E. DALL E is an image creation tool and so it's doing it's interpreting things differently from ChatGPT which is designed around creating text and code and interacting with you in that way.

AI has a wide variety of strengths. It is able to create large amounts of text and new images very quickly.

If you need something with very unique guidelines, it might be able to help you get that started very quickly.

It very closely resembles human writing with a relatively small amount of editing you can take something given to you by AI and make it natural. It can interpret conversational language. Search engines can sometimes not make a lot of sense.

It also has key risks. It has bias. It is too human in many ways. It will inherit human biases from the training data. Even if we're not aware of these biases, we're going to give them to the AI and it will reproduce that same issue but faster and more frequently.

It will hallucinate. It creates new nonsense due to having identified false patterns. I encountered this recently on a project which was attempting to use ChatGPT to spawn some early drafts of translations. What we quickly discovered is the first half of the translation would be fairly good and then ChatGPT started to make up new conversations.

So this was a transcript of a conversation between two people and it started introducing a third person into the conversation. It was hallucinating an additional person.

And then sycophancy, it was interpreting our desires as you want me to create something interesting. It didn't understand the simple concept of interpret this in a different language. Sycophancy is an interesting risk of AI is that as that artificial intelligence learns what you want, it might start inventing things to specifically meet your desires and what you're asking for.

And finally the lack of context. This is something I demonstrated early on with the image description generated from my own picture. The AI doesn't know the context that image is being used in. It doesn't know the context of me and what I have done and what I want to say in my story about myself. So this is a major gap in terms of interpreting things particularly for accessibility reasons in that it doesn't know what you want. It is just trying to interpret things according to what it knows. So what it has previously already been trained on and that may or may not be useful.

Next slide.

You are already using AI tools in many, many places.

It's used in speech to text which using a pronunciation dictionaries. Maps and navigations. It knows about road closures and traffic.

Biometric authentication. AI is used in that and it is learning about injuries and damaged finger prints.

It's using in grammar and spelling correction to analyze intent. For example, when a word like our is spelled wrong it can figure out which our you're looking for. It's used in search and recommendation engines. Google search has recently introduced that. And then digital assistants like Alexa, Siri And Bixby.

So, generative AI is marketed as a content creation tool, as an image alternative text tool, as an artwork creation tool and data analysis tool. But it has risks. It might be generating plagiarism. It might be flat out lying. What it calls an alternative text all it really is doing is describing what is in an image. And in artwork it might be violating copyright and generating biases.

An example of this is the use of AI in job recruiting.

This is a very specific example and it's one that has consequences across so many groups of people. Artificial intelligence started to be used as a tool in job recruiting heavily in the mid20 teens. By 2018 it was evidenced to be used by 2/3rd of recruiters. It was used as an early phase tool for sources and screening candidates. It's eliminating people from the job application process before a human ever looks at that application. That's exactly where it creates the most dangerous results.

There were multiple cases that resulted in lawsuits that showed clear evidence of age and gender bias. One example tool was automatically rejecting any woman over 55 and man over 60. It was biased against women and it's taking a human bias and amplifying it.

One thing I immediately see there is if we're observing an age and gender bias, what is the likelihood that we're not also seeing disability bias.

An additional example was a resume screening tool was evidence to bias toward existing characteristics. Training was saying these are the people we already have. The work force at that time was primarily men in their 30s. So we want more people like this. We want people that play tennis like our current employees. So that bias seems natural when you look at it as a pure data analysis. You're looking at it from the information you are given. These are working for the company. What you actually want is something much broader than that. So AI has definitely shown some problems in terms of bias. That doesn't mean that these are not unresolvable issues but they are dangerous.

Knowing the way AI works, what are the risks and potentials for people with disabilities. Now I will turn it over to Johan to talk you through that process.

Thank you so much.

Johan Rempel: Joe, thank you. That was very impressive presentation as most of you are probably aware, AI is so incredibly complex. The way that Joe broke that down I had to remind myself I need to speak in this presentation as well because I was mesmerized.

I'm going to focus more on disabilities.

I get a front row seat to this at Center for Inclusive Design and Innovation. We see the benefits but we also recognize many of the pain points with real life experiences of people with disabilities. So defining people with disabilities. This is a term that's tossed around a lot. If you attended the previous conference sessions you'll probably have the answer to this question. I'm going to run a poll question here quick. How many adults in the United States have a disability? I will give you a moment to respond to this. I suspect many of you will get the right answer on this. I will give it a few seconds here. Okay. The tribe has spoken. 55% of the respondents said 1 in 4. 23% said 1 in 6. 9% said 1 in 8. 13% said 1 in 10.

The correct answer is 1 in 4. Many of you had that readily available. That is a staggering number of individuals across the spectrum when we think of people with disabilities. So it really is a very large part of our population. It's not a fragmented isolated population that many people think of when they think of people with disabilities.

So roughly 1 in 4, 27% in the U.S. are living with a disability. So this is how the CDC defines disability. They break it down into mobility which is serious difficulty walking or climb stairs. Cognition, serious difficulty concentrating, remembering. Lack of independent living. Deaf or have serious difficulty hearing. Vision, this could include color blindness. And then lack of self care. Difficulty dressing or bathing independently.

I thought it would be of interest for some of you to see what the World Wide Web Consortium describes breaks down as disability. It's pretty broad. Physical disabilities, cognitive, learning and neurological disabilities, visual disabilities that could be low vision, blindness, color blindness. Auditory disabilities and speech.

So disabilities do impact all of us as many of you are aware. Disabilities can be situational. For example, even if you don't have a "disability" if you're accessing your mobile device on a bright sunny day for instance that could be a situational disability where the sun is causing so much glare that you're unable to see the screen. So things like color contrast, improved font size could improve everyone.

Temporary disability could be someone with cataracts who will eventually get surgery. A large number of people grow into disabilities and develop cataracts.

And then permanent disabilities. It could be cataracts as well. Some countries don't have the medical availability for cataract surgery.

And then keep in mind that 100% of us will have 1 or more disabilities at some point in our lives if we live long enough. Whether that's compromised hearing, vision, lack of fine motor skills. And then creating accessible and inclusive products and services benefits everyone.

There's so many examples of products and services that were created for people with disabilities but now benefit people across the globe. Text messaging was created in Europe for an individual who was deaf. Do most of us go through a day without texting? Probably not. So there's so many other examples. Speech to text was developed initially with individuals with motor disabilities in mind. Now we use speech to text every day.

Not considering the needs of people with disabilities in products and services disenfranchises more than a quarter of the population.

The benefits of AI for people with disabilities specifically.

Let's step on the sunshiny side of the street for a moment because we will step on the wild side in a minute.

So Joe mentioned some of these. These can be game changers for people with disabilities. Autocomplete, Spam filters, personalized streaming recommendation. I have a significant visual impairment myself. I happen to be a runner. That personalize streaming recommendation is fantastic. There's so many applications for personalized lists. Driving directions for people with disabilities is invaluable.

Assistive technology powered by AI. I have these two devices around me right now. I have Siri and Alexa and Google now. Alexa device our Tools for Life team were substantial enough to have an impact where people who would be in nursing homes could live independent. They can control their lights, their temperature, unlock and lock doors. So this has been such a game changer for people with disabilities. Google parroton app. Google's live transcribe app. This is for the deaf and hard of hearing population.

And most of you are probably aware of this the AI captions using Teams, Otter AI and Zoom. We often use AI captions within Teams. That's a supplemental tool for a couple of my colleagues who are hard of hearing. It's very helpful. What's nice too is these will be able to provide transcripts as well. I'll go into the transcript aspect in a bit.

Microsoft Seeing AI for people with low vision. It's astounding what this application can do. There's a lot of flaws to it but it's amazing. Recently I was showing some friends this app and I pointed it to a friend across the table. It said 58 year old woman. It got her age right. The audacity for AI to assume it knows the age but the added audacity to get the age right. My friend was shocked. I don't know how it pulled that off but it did. It may have been because I was feeding it information after the app was open referring to her age. It was spooky.

Wheelmap uses AI to crowd source information about public spaces. So from a crowd sourcing standpoint is this restaurant wheelchair accessible for example.

And fairly recently ChatGPT incorporated read aloud. This audibly communicates its relies to users. Removes the need for users to manually input their inquiries. It enables smooth conversational engagement and recognizes multiple languages.

All these large corporations are rushing toward leveraging AI so they can be the first or second out the gate.

Microsoft is no different. There's an AI copilot key that was recently introduced In Windows11.

All right. Let's step on to the wild side of AI. Challenges of AI for people with disabilities.

Joe touched on these more broadly and I will go into more detail here.

Frequent accessibility issues with AI related interfaces.

Basic aspects of accessibility within the various AI interface applications are often overlooked. This is a short list. Joe and I could probably come up with a couple hundred of accessibility issues. This is kind of the greatest violations here.

These can include color contrast. For someone with low vision or color blindness.

Keyboard access. Individuals with disabilities using their assistive technology devices and peripheral devices. Once an application is keyboard accessible, a lot of those other devices will ride on top of that keyboard user interface. So that's crucial. Programmatic and visual focus. It doesn't matter if a person has 20/20 vision. If someone is using a keyboard and pressing tab or switch device and there's not visible focus they won't know where they are at. Correct tab order, typically tab order should be left to right and top to bottom. Unless a person actually tests that it's never assume the tab order is correct.

And then lack of effective labeling of elements and headings which I will get into a moment. Basic things like using native HTML. If it's a button, label it a button. If it's a link, make sure you're not making it present as a button. And then headings are crucial.

So ChatGPT 40 has come out. Joe and I knew this was coming. By the time this was coming there would be advancements and there has been. This is a snap shot of the ChatGPT screenshot I took about a month and a half ago. There's accessibility issues right on the landing page itself. The third of the page and for limited landscape screen real estate here I truncated it a bit but the third top of the screen would be completely white. That's problematic because anyone who is using screen magnification it's highly unusual to have that top part all white. So they might look at the top part and see no text and move on quickly. So that's an unusual design and poses accessibility issues.

Toward the center top is how can I help you today? You would think that would be a heading. Visually it is a heading with bold large text. It is not coded as a heading. So let's continue moving down. There are options here. Explain airplane turbulence in bold letters and then to someone who has never flown before. The web accessibility guidelines recommends a better color contrast.

Moving down to the bottom left we're looking at I have the toolbar I have to move out of the way. We have the message ChatGPT. It fails color contrast. It also serves as place holder text. The moment you type in that it disappears. So someone with a cognitive or learning disability doesn't have the advantage of an explicit label if they get distracted or have to come back later. They don't have an idea of what that label actually said.

Moving over to the right we have an up arrow that fails color contrast from a visual standpoint. It also does not intuitively represent the send button. In fairness that up arrow does highlight when text is in the field but a person has to enter text to know there's an up arrow there if they are low vision or color blind.

So this is a short smattering of accessibility issues. This is only on the landing page of ChatGPT.

So, we can talk all we want about AI and its benefits but as this newer technology rolls out we have to keep people with disabilities in mind and make sure it's accessible from concept to design to development to implementation. People with disabilities have to be part of that conversation and process.

I have to move this tool bar around.

On the screen now is an image of a gentlemen who is using a knee walker. He's moving up a ramp into a building. That's pretty obvious to someone who can see this image. But this is only recent weeks this is an image that I ran through Microsoft's AI generated alternative text. This is recently. The alternative text represented this image as a person riding a bicycle.

Quite humorous and quite sad if a person actually needs a description of this image. It's supposed to convey any sort of meaning. There's a number of fails here. It fails to differentiate a knee walker from a bicycle. It inaccurately applies the verb riding. It does not identify the accessible ramp. It does not provide information on how the ramp provides access to the building itself. So another example of failed AI with alt text.

Joe Dolson: Can I interrupt you? You skipped two slides.

Johan Rempel: Thank you. I appreciate that. Okay. So I mentioned this already that Microsoft does generate its own AI alt text. Depending on which version you have, you want to be cognizant that it is not a default. If you run the accessibility checker and it inadvertently applies an AI generated alt text, regardless of what the alt text says it will check it as successful. There's so many applications that use AI generated alt text.

So the complexities of alt text. What AI does a poor job of is getting things in context. We have a beautiful picture of tulips on the right. I don't know a lot about tulips. Here's examples on what the alt text for a single picture like this could change to. If this was a website content image it could say yellow tulips blooming in the spring. That's what I see. If a person in is in a horticulture class, they may need to know what type are these tulips. They are Tulipa gesneriana. So if this is a class where a student is being marked, that alt text is important.

An image as a link. This could potentially represent the tulip society of America for instance.

Or if this is simply decorative, a bit of eye candy and a screen reader user doesn't want a long description you can apply an null attribute to ignore the image.

So as you see, it's complex when talking about context.

Barbara Tucker: This is your time check. It's 11 a.m.

Johan Rempel: Thank you so much. I have a lot of content to cover. AI generated captions. These can produce content quickly thereby producing large volumes of products descriptions. The barriers are confidence intervals. AI assumes that the next words if misspoken or when sound interference occurs includes in the transcript as if it was actually spoken. So it's hard to know what it got right and what it got wrong.

It will not include a parenthetical like cannot hear. Removing the opportunity to ask for further clarification. This is why we have Heather captioning for us today. This is critical information we're sharing through this conference and we want people to get the correct information. Human inarticulate. AI tends to include every utterance even when it's not valuable or necessary in the context of information shared.

So how and when to use AI generated captions? They have their place. When they get things wrong though it will get things very wrong. AI captions are best used for low stakes multimedia and not critical information. When it pertains to healthcare or education or employment the stakes are too high to rely on AI captions.

In some ways it really can impact their future trajectory of graduation and employment and their health.

To the right here is an example of an AI generated caption. This was during a national anthem for the Portland basketball game...

[Reading]

I don't know about you but that last sentence was one of the few that I actually recognized. So it can be comical but there are significant consequences.

Trained AI models exhibit learned disability bias. Joe touched on this. Finding from Penn State of information science and technology research on AI and disability bias. AI is not evil. It's just that old adage of junk in and junk out. They often contain by / Ss against persons with disabilities. Statements referring to people with disabilities receive significantly more negative and toxic scores than other control categories and tools often classified statements as negative or toxic simply by the presence of terms such as blind. That is so insulting for people with disabilities. To have those biases.

So policies and practices around AI. We're going to start local and then go broad internationally with these.

You'll recognize a common theme is we need guardrails in place. This technology is happening so quickly. I really like what Tally Wells said in his presentation yesterday that we can't just rely on laws and regulations to dictate human behavior. We need to be more proactive with that because laws and regulations are going to tail behind.

That being said, policies and practices are essential.

I give the Georgia Technology Authority a lot of credit for the work they've done on some of their principles surrounding AI. The following are 5 principles around the design, implementation of automated systems. Implementing responsible systems, ensure procurement processes, including HR and the procurement process, maintain data quality and privacy. Making sure the quality control mechanisms are in place. Being transparent about which AI usage is being leverage. And then keep human involvement at the center.

People need to be at the center when it comes to the evolution of AI and its implementation.

ADA.gov provides some guidance on AI as well. Aide.gov guidance explains how algorithms and AI can potentially lead to disability discrimination for hiring in areas such as job advertisements to targeted groups, deciding if the applicant meets job qualifications, holding online video interviews, using computer based tests to measure the applicant's skills and scoring.

So this is the algorithmic accountability act of 2022. This bill requires certain businesses that use automated decision systems to make critical decisions to study and report about the impact of those systems on consumers.

The Federal Trade Commission in consultation with relevant stakeholders must issue regulations to implement the bill. The bill provides for enforcement by the FTC and state officials and the bill establishes the bureau of technology to advise the FTC about the functions.

And this is an executive order put out by the White House very recently. This was late last year. October 30th. When you say executive order on the use of artificial intelligence. It was a challenge to put this into one slide. This when printed out would be hundreds of pages. All of these links will be shared with you and provided with the full PDF in the future as well.

The purpose: Artificial intelligence holds extra ordinary potential for both promise and peril. Responsible AI use has the potential to help solve urgent challenges while making our world more prosperous, productive, innovative and secure. That's the sunny side.

Let's go to the wild side. At the same time, irresponsible use could exacerbate societal harms such as fraud, discrimination, bias, displace and disempower workers.

Let's go international here.

This is an UN report on governing AI for humanity. As the UN has rightly recognized in its interim report for governing AI for humanity. This technology cries out for governance not merely to address the challenges and risks but to ensure we harness the potential in ways to leave no one behind. This is a lengthy document. Capacity building and AI literacy, creation of global risk taxonomy and repository and harmonization of existing frameworks.

All right, so let's talk a little more about removing barriers to help ensure inclusion for people with disabilities.

So the partnership on employment and accessible technology also known as PEAT I can't speak highly enough on the work they have done related to the topic on AI.

They have developed the AI and inclusion toolkit. This is free to anyone who would like to leverage this, repurpose this in your organization.

It includes equitable AI in the workplace, risk of hiring tools, business case for equitable AI, equitable AI playbook and inclusion resources. I would have loved to spend half an hour on this alone. I strongly encourage you to leverage that.

And this is one of the last slides but certainly one of the most important is provide people with disabilities a seat at the table.

So often and companies are doing this rapidly. They are pushing things out the door to be first on the market and people with disabilities are being left behind.

So it's critical that people who are designing the human computer interactions that involve generative AI improve their knowledge of inclusive human centric design.

With the statistics we saw earlier it's more than 1 and 4 with a disability. So disability is highly nuanced and diverse. So user research should be conducted with that in mind. By working alongside and collecting feedback from individuals with various types of disabilities and who are neurodivergent there is a greater assurance of accessibility for everyone. I will move this tool bar again. Hopefully I didn't advance slides again.

And then procurement. It is the responsibility of organizations to effectively vet AI related products in their procurement to ensure equitable experiences for everyone.

And these are a number of the we're moving to the sunny side of AI. These are a number of the applications that I mentioned earlier and hyperlinks to those. If you or anyone you know can leverage these. Again it's not a black and white issue of AI being evil or the panacea for everyone. We're living in the gray. We pick out the cherries and proceed cautiously when it comes to critical things related to employment, education and health. We want to thread carefully.

And with that I will open it up for questions.

Barbara Tucker: Thank you so much Johan and Joe. We have a question from Darrick that says does AccessGA provide guidance on making maps more accessible?

Johan Rempel: Maps, yes. We have done some work with maps. So AccessGA is really targeting state agencies within Georgia. Certainly some of those resources can be repurposed outside the boarders of Georgia. So if you represent a state agency within Georgia, please do reach out. We would definitely be open to learning how we could assist you can making sure that maps are accessible.

Barbara Tucker: Thank you, Johan. Please finish.

Johan Rempel: What I can do is I will take the initiative to reach out to you Darrick. We have a list of all the attendees. I will reach out to you within the next week.

Barbara Tucker: Thank you. And Susan says not a question but wow. This presentation is both excellent and overwhelming. Thank you so much for this information that should be required for many offices. And that's our last comment, Johan. Thank you both.

Just a bit of the housekeeping before we end. Zoom will disconnect everyone from this morning's presentation. We'll break for lunch and return for our afternoon session at 1 p.m. You'll log back in with the link you used this morning. The afternoon session is entitled ensuring effective communication. Thank you for joining us this morning and enjoy your lunch time.