

'Panel Discussion About AI and Disability'

Panel: Nicholas Lesica (University College London), Sahrish Panjwani-Charania (Gwinnett County Public Schools)

International Disability Rights Affirmation Conference 2024

November 15

[2024/11/15 08:28] Carolyn Carillon: Hello everyone.

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Transcription is provided by Virtual Ability, Inc.

The transcriptionists are:

Elektra Panthar

Carolyn Carillon

Tom Bukowski, the pinch hitter :)

The speakers will be identified by initials as they speak.

The following initials in the transcription record will identify the speakers:

LF: Liberty Fairelander

NL: Nicholas Lesica / lesica3

SPC: Sahrish Panjwani-Charania / sagrusg925

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[2024/11/15 08:30] Liberty Fairelander: Hello and welcome to Virtual Ability's 2024 International Disability Rights Affirmation Conference.

I'm Liberty Fairelander, and I am visually impaired. I am American and I've been part of Second Life for 21 years now. It was the creativity of Second Life that first drew me in, as I am an artist in real life.

Over the years, I've also become involved in many other areas, most of which center around volunteerism because I find so much fulfillment in helping others.

Today, I am both humbled and honored to participate in this conversation alongside our distinguished guests: Dr. Nicholas Lesica and Ms. Sahrish Panjwani-Charania. They will both share with us insights from their research on assistive AI in their fields.

Dr. Lesica is a Professor of Neuroengineering at University College London's Ear Institute. His research focuses on understanding how the brain processes auditory information, particularly through the study of neural coding in the early auditory pathway. His lab employs large-scale in vivo electrophysiology and computational methods to investigate these processes.

Dr. Lesica has also explored the transformative potential of artificial intelligence in hearing healthcare and research.

Ms. Panjwani-Charania is pursuing a Ph.D. in science education and serves as an instructional coach supporting high school interrelated special education teachers with Gwinnett County Public Schools in Georgia.

She is also the project manager for Proportionate Shares, which develops resources for students with disabilities in private schools or those who are homeschooled.

Ms. Panjwani-Charania has co-authored a systematic review on the use of artificial intelligence to support students with learning disabilities, highlighting various AI applications and their potential benefits.

Please join me in welcoming our guests.

[2024/11/15 08:33] Edith Halderman:

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[2024/11/15 08:33] Edith Halderman:

[2024/11/15 08:33] Scarlett Qi: /me applauds

[2024/11/15 08:33] Tom Bukowski: /me claps

[2024/11/15 08:33] Gentle Heron: Thanks for being with us today



[2024/11/15 08:33] Liberty Fairelander: Dr. Lesica, could you begin by telling us a bit about yourself and sharing how your research in neuroscience has evolved to incorporate assistive AI for those with disabilities?

[2024/11/15 08:33] Elektra Panthar: NL: My pleasure, Thank you for inviting me!

I started my career as an engineer in undergraduate and have a PhD in that too, I got interested in neuroscience during my PhD

I hoped to be able to use engineering principles in neuroscience. Around 2010 I felt stuck, so I became a neuroscientist

Tried to record activity of the brain to scale

2005-2015 I put a lot of effort into knowing more about it

After that tech like AI and deep learning started to become available and that has amazing potential in neuroscience and assistive technology

So I went back to engineering, uniting the data with the AI

[2024/11/15 08:37] Carolyn Carillon: LF: I'm fascinated by all your papers

I want to know so much

[2024/11/15 08:37] Liberty Fairelander: What are some of the recent breakthroughs in neurotechnology that might surprise people regarding how we can now support or even restore neural functions?

[2024/11/15 08:37] Elektra Panthar: NL: it's an exciting time indeed

In tech the biggest breakthrough is the cochlear implant

It bypasses the ear and it's been expanding rapidly
But still there's a lot of room for improvement
We are trying to figure out if it's impossible to stimulate the brain with light instead of electricity
Can we build a cochlear implant with that technology? can we combine these devices with gene therapy?
Also AI based processing things like AI based denoising
In the short terms these last are things we might start to see

[2024/11/15 08:40] Liberty Fairelander: Ms. Panjwani-Charania, please share with our audience a bit about yourself and your work, and how you became interested in the use of AI to help students with learning disabilities?

[2024/11/15 08:41] Carolyn Carillon: SPC: thanks

I'm new to the field of AI

My undergrad is in biology

There I got interested in teaching

Especially in children with learning disabilities

As a teacher, you're always trying new strategies

You have to get to know students to customize the learning for them

I had many students with unique needs

I had to adapt my lesson to each student

It's like planning a different party for different people

It was taking time and effort

How could I do it more efficiently?

Others have the same challenge

As part of my grad program, I did a lit review

Looking at AI & supporting students with learning disabilities

Not diagnosing students

But for students who had already been diagnosed

The research was limited

Most was aimed at dyslexia

And mostly diagnosis, not intervention

We needed something that dealt with socio-emotional challenges as well

[2024/11/15 08:45] Carolyn Carillon: LF: that's so useful

[2024/11/15 08:45] Liberty Fairelander: Your work often emphasizes the intersection between AI, user accessibility, and inclusivity. Could you tell us about some challenges you face in ensuring AI remains accessible for all users, especially for those with disabilities?

How do you see these challenges evolving as technology advances?

[2024/11/15 08:46] Carolyn Carillon: SPC: ensuring accessibility can be challenging

Most research is about diagnosis

I adapted the SMAR framework

Using AI

To address different learning profiles

Each student is unique

We also needed tech that was scalable

This may evolve over time

Ideally, these technologies will learn the student and know their needs and customize their learning in real time

Also need tools to use in different educational settings

Requires collaboration between teachers and policy makers to ensure equity

[2024/11/15 08:48] Liberty Fairelander: Dr Lesica, when creating assistive technology, usability can vary greatly from person to person. How do you incorporate real-world feedback into the development process to ensure that your technologies are truly empowering and intuitive for users with different needs?

[2024/11/15 08:50] Elektra Panthar: NL: this is something I'm proud to say, if you have a proposal about technology intended to help a group of people, here in the UK they ask you if you actually talked and collaborated with the user group interested

So for assistive technology we are working with the audiology department in the hospital They are involved in research and testing as well

In getting real world feedback, we make sure that the technology can get to the real user and adapt to be able to provide the best help

Right now as you get the cochlear implant you need to calibrate it with the audiologist, but then you are on your own or not able to go back to the audiology - in the future we hope AI technology can help make these devices adaptable by asking questions to the user

We hope communication between user and tech can be more efficient in the future, and that the device remembers the settings according to environment conditions.

[2024/11/15 08:53] Liberty Fairelander: Ms. Panjwani-Charania, as you work to develop assistive AI solutions, what are some of the misconceptions you encounter about this technology? And how do you address these misunderstandings with your users or the public?

[2024/11/15 08:54] Carolyn Carillon: SPC: A common misconception is that AI is limited to identifying learning disabilities

There's more potential in AI

It's out there but not accessible

We have tools like Alexa (?) to enhance the readability of texts

It adapts content in real time

Students have control of what works for them or not

That tool helps support interaction

There are also communication assistants that corrects errors for those with dyslexia

The tech can also keep the slang or informal conversation so make interaction easier

And more comfortable

There are tools that go beyond diagnosis

But they're still in development & not widely available

We're also looking at generative AI

And helping people learn how to use it

We need to share what's out there & how we can use it

Once things have moved beyond prototype

[2024/11/15 08:57] Liberty Fairelander: Dr Lesica, could you discuss the importance of neuroplasticity in assistive AI and how your research utilizes the brain's adaptability to improve functionality in assistive technologies? Do you believe this adaptability opens new possibilities for rehabilitation?

[2024/11/15 08:58] Elektra Panthar: NL: yes this is an area where we need to do a lot better

Neuroplasticity is everything, there's a lot of variability in outcomes

It's not clear why there's so much variability but we think it's neuroplasticity

The brain is getting new information and needs to learn how to use them

It's also why there's a push for people to get implants early because the plasticity of an infant is higher than the one of an adult

For hearing aids, in case of people losing hearing gradually with age, when they get the implant the brain was used to diminished input so needs to adapt to new information

In advanced age plasticity is not optimal but it's not impossible

We can make these devices more useful for people by taking this into consideration

[2024/11/15 09:02] Liberty Fairelander: Ms. Panjwani-Charania, your work has also delved into the social implications of assistive AI. In your view, what role does AI play in fostering community and social connection for individuals with disabilities?

[2024/11/15 09:02] Carolyn Carillon: SPC: AI plays a unique role

By supporting communication

And reducing barriers that isolate students

Tools with natural language processing help students communicate better by reducing errors and promoting authentic communication

By preserving that natural tone

As opposed to sounding like a bot

Also allows teachers to encourage interaction

Also beyond the classroom and into everyday social interaction with friends and peers

So it encourages social & emotional well-being

[2024/11/15 09:05] Chezz Conundrum-Firelyte (Chezz Firelyte): The digital/augmented glasses can't get here fast enough

Would be so cool to have digital eyes/lenses

My hearing aids are Bluetooth enabled and app controlled. They're pretty neat

[2024/11/15 09:07] Gentle Heron: Meta's smart glasses outsell traditional Ray-Bans in some stores, even before AI features roll out <https://techcrunch.com/2024/10/21/metas-smart-glasses-outsell-traditional-ray-bans-in-some-stores-even-before-ai-features-roll-out/>

[2024/11/15 09:04] Liberty Fairelander: What does the future look like for assistive AI? Can you each share your vision for where you hope this technology will lead us, both in the next few years and in the longer term?

[2024/11/15 09:06] Elektra Panthar: NL: maybe this won't be what you think about, but in our circle we think that in sensory technology maybe people will be wearing enhancing devices all the time and hopefully assistive technology won't be distinguishable from the enhancing ones, so that will reduce the stigma. See Air pods nowadays
So it will be easier to embed assistive technology in that kind of devices

Hopefully this technology will be able to be spread in more places other than cities like London

[2024/11/15 09:08] Carolyn Carillon: SPC: To piggyback on what Dr. Lesica said, it's important to reduce stigma

AI needs to be discreet

I love the example of the Air pod

We use Chromebook and laptops to do activities

In the past, students may have needed a tech but wouldn't use it because of stigma

But now students just plug in headphones and the computer reads it

They could be listening to music

So they receive the accommodation without being singled out

Hopefully that's the future of AI

Also for teachers

To suggest adaptations for students

There's a software called Be Special software (?) that offers customized learning experiences

It adapts content but also offers teachers strategies

We have a shortage of educators

Maybe AI can alleviate some of the demands on teachers

I'm not sure what will happen but hopefully we'll see this in the next decade

[2024/11/15 09:11] Liberty Fairelander: What advice would you give to aspiring researchers and advocates in the field of assistive AI? How can they contribute meaningfully to advancing technology that prioritizes accessibility and empowerment?

[2024/11/15 09:11] Carolyn Carillon: SPC: we talked about going straight to users

That's important to do from the beginning

To understand challenges and needs

By going straight to users, we increase impact

We also need to collaborate

We can't be isolated to our fields

[2024/11/15 09:12] Tom Bukowski: Even anthropology! 🤪

[2024/11/15 09:12] Carolyn Carillon: SPC: we need to come together to design solutions that are practical and scalable

We have a research to practice gap

Researchers can help bridge that gap

And help bring the research back into the hands of educators and families

[2024/11/15 09:13] Elektra Panthar: NL: I agree completely

On a practical note there are barriers to include people, there are also data protection and privacy issues. In the UK it's balanced heavily towards caution

If people that are a part of patient advocacy group want their data to be used or to be contacted by researchers they might want to come forward to accelerate the collaboration between users and researchers

[2024/11/15 09:15] Carolyn Carillon: LF: Any questions from the audience?

[2024/11/15 09:16] Gentle Heron: Thank you both for your candid reflections on this technology.

QUESTION - Ms. Panjwani-Charania, what are your main general concerns about children using AI? What are the negatives here? You probably saw that our next presenter, Rose Hill, will share some of her concerns about that as well.

[2024/11/15 09:17] Carolyn Carillon: SPC: There are benefits and challenges about how students use tech

What will they do?

What they'll access?

As educators and parents, we need to educate students

Currently, I recognize that we don't know how students will use it

We need to give people the space to use it and learn

Avoiding isn't the best course of action

We need a game plan

So that students leverage their strengths and get good resources through the AI (i.e. by helping people craft good prompts)

Using the right questions to get the right results

And how to add your personality

[2024/11/15 09:18] Pecos Kidd: I love the "everyone's using air pods, so my use of them for hearing augmentation doesn't stand out" concept. This is the principle of "Universal Design".

If our presenters aren't familiar with that term I encourage them to check it out.

[2024/11/15 09:19] sahrish925 Resident: Absolutely! UDL is big for students with disabilities!

[2024/11/15 09:20] Gentle Heron: UDL guidelines here: <https://udlguidelines.cast.org/>

[2024/11/15 09:19] Mook Wheeler: QUESTION FOR EITHER: We've had to acquire literacy each time a new technology emerges. The younger generations are generally technologically & digitally-literate. If your computer breaks, you turn to your 12-year old. Being technologically literate is easier to define, though. What would AI-literacy look like, and how would we go about acquiring it?

[2024/11/15 09:20] Carolyn Carillon: SPC: As we're supporting educators, we see that [they] have a range of experience, [some are very technologically literate, some are not] I'm not sure what AI literacy looks like

But we're trying to teach people the benefits and problems

Also, how to prompt so you get what you want

Know where your sources are coming from

Know your tools

We talked about Gemini recently at a conference

Gemini gives you links so you can see the sources

So you can evaluate them

You make your own judgement call

[2024/11/15 09:22] Mook Wheeler: @SAHRISH: So in a way, gaining AI-literacy is also about putting the human (me) back in the loop.

[2024/11/15 09:24] sahrish925 Resident: Absolutely!

[2024/11/15 09:23] Pecos Kidd: "Is it trustworthy" is also a problem with 12 year olds....

[2024/11/15 09:22] Elektra Panthar: NL: I agree, there's a double edged sword to what I'm thinking about technology

I hope that we should be able to communicate through our standard means with technology
I agree that we need to be able to judge the validity of the AI output

[2024/11/15 09:21] Chezz Conundrum-Firelyte (Chezz Firelyte): Gemini told someone to self-delete recently with no prompting, I heard.

https://www.reddit.com/r/artificial/comments/1gq4acr/gemini_told_my_brother_to_die_threatening/#lightbox

Read at your own MH. Trigger warning

[2024/11/15 09:24] Carolyn Carillon: LF: Do you see personal LLMs in the future?

[2024/11/15 09:24] Elektra Panthar: NL: I worry about that

I hate the idea of there being a digital version of people

It can happen, especially for those people that have a lot of content available

See AI being able to talk as a famous person

I think we can get something personalized on a superficial method but it won't be like the person anytime soon

But possible

[2024/11/15 09:25] GoSpeed Rasere (GoSpeed Racer): Sounds like a Dark Mirror episode

[2024/11/15 09:26] Carolyn Carillon: SPC: I think it's possible and I don't like the idea
I'm a believer in the human touch

[2024/11/15 09:21] Marly (Marly Milena): I am wondering how AI use might affect human evolution. Will the more direct ways of knowing disappear?

I think that AI could produce disabilities that weren't there before. If I ask AI to make an image of something instead of drawing it myself, eventually, I will not be able to have the hand-brain-eye coordination I had before

[2024/11/15 09:27] Gentle Heron: Thank you both. We need you both back for more discussion.

[2024/11/15 09:27] Elektra Panthar: CC: Thank you everyone for this informative session!
Please click on the boxes for reference

GH: the boxes also have contact info

[2024/11/15 09:27] Pecos Kidd: Very interesting discussion - thank you all!

[2024/11/15 09:27] sahrish925 Resident: Thank you for having us!

[2024/11/15 09:27] Tom Bukowski: Thanks so much for this discussion!

[2024/11/15 09:28] Buffy Beale: Great session thanks!!

[2024/11/15 09:28] Scarlett Qi: Thank you both!

[2024/11/15 09:28] Carolyn Carillon: <<transcription ends>>