

Connect Special

edition 31

Editor's Desk

Dear friends,

"My attitude is that if you push me towards something that you think is a weakness, then I will turn that perceived weakness into a strength"--*Michael Jordan*. These words ring in my ears as I get this month's edition out with interesting reads. Happy Reading!!

Regards,
Bhavna Botta
connectspecial.in

Meet **Shalini Sarawati** , a poet, blogger and a blade runner . Undeterred by the loss of her arms and legs to Rickettsial, a rare kind of bacterial infection. Shalini wore bright purple nail polish on feet as she went to have her legs amputated . Shalini's positive attitude changed weakness to her strength. Here she shares **her** thoughts on life, disability with us



Your journey so far and what helped you most to cope with disability -I know it is your family and friends -but what in them helped you

I think there was a lot of things that helped me, something we sometimes forget has been our privileges and things we take for granted. I had a fantastic support system whether it was my family or my friends who not for once felt the need to resign to our "fate". They never treated me different. During the two years I was in bed, we tried to keep things as real as possible, we focussed on the things we could do instead of the things we couldn't. I also think I've always been very happy go lucky as a person, so definitely that attitude helped. The fact that the worse was over and our focus needs to be to move forward and not mope about our losses.

Your work -what sort of adaptations are helping you as a poet ,blogger ,blade runner .

My office called me '14 asking if I could work part time to help with some recruitment work. So I took it and started working for few hours. About six month later I started working longer hours plus had a team reporting to me. After a year I moved full time into my current role of DGM Business transformation, where we implement new

technologies to help augment productivity or improve our performance delivery. I haven't needed to alter anything specifically at work or technology wise to adapt to work, I have managed with a laptop and learnt to deal with it in my current state. Wearing blades and running with them were a whole new experience and took some time getting used to. You have to learn to control the bounce and basically try and stay alive the initial few days!! All it took me to get better was practice. Day in and day out practice

Do you think there are enough opportunities for people with disabilities in the work force

I think there are few organisations that are doing a lot and a lot of organisations that do nothing. There are definitely opportunities, but there is more than that a lack of will to bring these opportunities to Pwds. Work that is being delivered is in pockets and few and far between.

Your thoughts on disability and inclusion

Disability has been new to me, it's opened up my world to a complete different life. It's made me realise so many things that I took for granted. It's definitely made me a kinder person and less judgemental of the people and the world. It's also taught me that disability is normal, just a different normal to yours.

Inclusion I feel needs to become something that we hopefully don't have to harp about, it needs to become the norm. I think India as a country has a long way to go, because we still consider disability a taboo and haven't as yet gotten over our archaic thoughts about it



Meet the duo, Amit Kumar and Rituparna Guha from IIT Delhi, who walked away with the prestigious The James Dyson Award ,a national award which supports budding design engineers. The wheelchair they designed ,Samarth , provides an easy, safe and convenient way of shifting wheel chair users, from wheelchair to other mediums and ease the life of care givers.

1.Why did you choose to design a wheelchair -the story behind ,the idea ,the wow movement.

Our journey began from the Cheshire Home for Disability. We saw many spinal injury patients, whose entire lives changed after one fateful accident, it was really heart wrenching. As we observed their activities, we noticed the trouble they faced during transfer and immediately decided to work on it. Working on this project has brought us closer to reality. Real world, real people, real problems and most importantly their undying spirit to stand through all struggles every moment.

The wow moment was

“Aap logon ko nahi pata apne kya bana diya hai! This is amazing yaar!” - Faisal Bhai exclaimed.

Faisal Bhai is our friend and a wheelchair user back in Cheshire home for Disability, who believes that some further work on the look and feel of the product could make it a revolutionary and desirable launch in the market.

what are the features -with explanation and how is it cost effective .

‘Samarth’ an assistive mechanism component of a wheelchair which helps in transfer of quadriplegic patients from wheelchair to any other medium and vice versa. It facilitates easy, safe and convenient shifting of patients making them a little more independent. The highlight of the mechanism is a modular wheel which is semi openable from three sides accompanied by an armrest turned transfer board. The combination works best for an easy, intuitive and safe transfer for patients, who also can do it independently to a great extent.

Unlike the existing boards, Samarth is an integral transfer mechanism which provides the preferred lateral shifting from wheelchair. What makes it unique is its ability to integrate within any wheelchair with minimum interventions thus eliminating the portability issue. This also makes it scalable for individuals with limited resources and restricted economy. Also, the design of wheel gives ample flexibility in positioning the wheelchair in the closest possible proximity of the platform.

3. How do you intend to take it forward from prototype to manufacturing

There are many aspects of the product which need further interventions.

-The material analysis of the transfer board along with the wheel. An optimum choice of materials between parameters like durability, Light weight and strength of these materials is what we are looking for.

-Also, the lock mechanism of the open-able segment of the wheel is being explored. An easier, safe and function-able option for the users is the main aim.

-We also wish to work on the form of the wheelchair to make it more attractive as usable product. At the moment only, functionality aspect has been addressed, but there is a lot to be explored in terms of a finished product for the users.

4.Tell us about the competition in the award.

It is a challenging competition platform and there were more than 100 entries from other IIT'S, NID and other colleges as well. We are delighted as well as grateful for being awarded and representing the idea on an international level.

5.any other plans to work on other assistive devices

We are working in close association with the Spinal Injury Patients and align our academic projects to live problems as well. We hope we can come up with innovations which prove useful to the assistive device seekers.



EMERGING TECH

From translating hearing aids to sign-language gloves, amazing assistive tech

Originally published at- [Access and Inclusion Through Technology](https://www.digitaltrends.com/cool-tech/8-amazing-technology-deaf-community/)

<https://www.digitaltrends.com/cool-tech/8-amazing-technology-deaf-community/>

From signing robot arms to mind-reading hearing aids, the next few years are going to be pretty darn amazing for accessibility technology if this list is anything to go by. Here are some of the most impressive tech projects we've come across in this area.

PROJECT ASLAN

Signing is all well and great, but like any language it's not much good if one side of the conversation doesn't speak it. That's where a multi-year robotics project from researchers at Belgium's University of Antwerp comes into play.

They have developed a 3D-printed robotic hand capable of translating spoken and written words into sign language gestures. The device recognizes these words using a webcam, and then communicates them to the user through "fingerspelling," a mode of sign language which spells out words letter-by-letter with single hand gestures.

Though not currently available, Project Aslan's robot hand can be 3D printed for just a few hundred bucks, and promises to be small enough to fit in a rucksack.

CAMERAS THAT CAN TRANSLATE SIGNING

A robot which can turn speech into sign language is good, but for a full conversation to take place you need technology that's able to turn sign language into voice or text, and voice into text or sign language — and to do all of this in real-time.

That's what a Dallas-based startup called KinTrans has developed, with a 3D camera and accompanying microphone that's able to determine what is being said or signed, and then translate it quickly and accurately for the other party.

According to its creators, the system is already able to recognize thousands of signed words with an accuracy of around 98 percent. It can handle multiple languages, too.

SMART GLOVES

<https://www.youtube.com/watch?v=v4XS7A3hfgg&feature=youtu.be>

Don't like the idea of being watched by a camera? No problem. At the University of California San Diego, researchers have developed low-cost smart gloves able to automatically translate American Sign Language (ASL) into digital text which appears on a corresponding computer or smartphone. No camera required.

To use the glove, the wearer simply signs out letters in the ASL alphabet, which are then recognized due to variances in electrical resistance. Like Project Aslan, one of the best features of this solution is its low price point, making it a potentially affordable solution to a challenging problem. The components in the smart glove add up to less than \$100 in cost.

While it's still a research project for now, we can imagine that price coming down further with mass production.

NEXT-GEN TRANSCRIPTION TECHNOLOGY

Thanks to advances in speech recognition, speech-to-text technology has been getting better for years. But it's not always useful for situations in which there are multiple people speaking, such as in a group conversation setting.

A new Indiegogo campaign called SpeakSee, created by Netherlands-based entrepreneurs, uses individual clip-on microphones and beamforming technology to isolate specific people's speech and filter out any background noise.

As a result, conversations are transformed into script-like transcripts, in which different speakers are highlighted in unique colors. These can then be read on an accompanying tablet or smartphone.

BRAINWAVE-READING HEARING AID

Imagine if a hearing aid was able to work out what sound you're trying to focus on and magnify just that audio, while quietening down everything else.

That's what researchers from Columbia University School of Engineering and Applied Science have been working on with a new "cognitive hearing aid," designed to help wearers in situations like crowded rooms.

The device works by monitoring the brain activity of users, and then using a deep neural network to figure out which speaker's voice the listener is concentrating on. Right now, it's still a research project, but this could be transformative if and when it eventually arrives on the market.

SOLAR EARS

There are close to 400 million people worldwide with a hearing loss-related disability. Of these, more than half live in countries with lower levels of income to places like the United States. That's a problem when it comes to hearing aids, since the cost of the devices and their batteries can be out of reach for many people they would otherwise be able to help.

As its name implies, Solar Ear is a solar-powered hearing aid, whose batteries are designed to last 2-3 years, compared with the 7-10 days of a common battery. It's considerably cheaper than regular hearing aids, too.

TRANSLATING HEARING AIDS

<https://www.youtube.com/watch?v=ulmL2uZm4XQ&feature=youtu.be>

Hearing aids allow users who are deaf or hard of hearing to have other people's voices piped directly into their ear. But what if it could perform a bit of computational magic along the way, and use machine translation to, say, transform a native German speaker's words into English? That's technology that will certainly find itself into high-end hearing aids over the next several years.