

# The Impacts of COVID-19 on People who are Visually Impaired: Interview with Kartik Sawhney, Co-founder of I-Stem

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Divija and Hari Bimaraju are co-presidents of DonumVisi, a 501c(3) nonprofit that aims to educate communities about the causes and cures of blindness as well as improve the lives of the visually impaired through building accessible resources and technologies. Kartik Sawhney is a Stanford graduate as well as the Co-founder of I-Stem (<https://www.inclusivestem.org/>), a company that addresses inefficiency in disability offices as well as the lack of accommodations and resources for disabled students in India and other developing countries. He is also a software engineer at Microsoft and has worked on Cortana within the AI and Research Team. The Donum Visi team interviewed Kartik to get a perspective from a visually impaired person on the impact of COVID-19.

## **What are the biggest challenges you are facing as a visually impaired person during the COVID-19 pandemic?**

Most people, whether or not they are disabled, are struggling with productivity while working from home during the pandemic. For visually impaired people, however, there are additional challenges. Since we do rely a lot on interacting with and getting help from others, social distancing has made things much more difficult, and you definitely see reluctance from other people. An example of this is contactless delivery--it can be quite hard to find where the food is. "Oftentimes things aren't as accessible, even in the digital space, as you would want to see," making it much harder to get assistance.

## **Do you think the pandemic has exacerbated any existing inequalities in your workplace or education?**

I actually have not faced any problems; in fact, I've seen other co-workers become more understanding. However, I don't speak for the whole community. I am in a very privileged spot to be working at a company that has a very open mindset. However, for those that aren't so privileged, it is a completely different world. While technology based jobs like mine aren't affected that much in the virtual working model, the jobs in other disciplines certainly got affected more. There is a stigma where visually impaired people and others with disabilities are discriminated against, and the pandemic has definitely exacerbated this.

### **What kind of tools and technologies have been helpful in reducing inequalities?**

Apps that use computer vision to do Optical Character Recognition (OCR) are quite helpful. In general, any apps that use the phone's camera to get a better understanding of what's around them are effective tools. If there are people in your life who can help you in conjunction with technology, it will be a big help. My company, I-Stem, is also doing work along these lines by converting inaccessible digital material to accessible content using methods like OCR. There are also companies such as Aira (<https://aira.io/>), which connects visually impaired individuals with sighted volunteers, and Seeing AI, an artificial intelligence application developed by Microsoft that identifies objects with the phone camera and describes them out loud.

### **Are there any important and popular tools that are no longer accessible due to COVID-19?**

Tactile diagrams are no longer easily available. Because of this, visually impaired people have had to find creative new ways to learn, and they have had to become more dependent on verbal cues. I think we will become a lot more innovative if anything. People will learn how to adapt. I also think we can try to have local 3D printers and share the files digitally so that more people get access to tactile diagrams. Especially in developing countries, people will be forced to innovate and explore localized options.

### **At Donum Visi, we encourage people to focus on practical solutions and make things accessible using technology. Do you have any ideas on how Donum Visi students, members, and/or engineers from Silicon Valley can get involved?**

I think there is so much opportunity here. For example, take Zoom. It's one of the primary methods of communication today, and it only makes sense for it to be more accessible to all people. However, for those who are deaf or hard of hearing, using Zoom is impractical as it does not support native captioning. Education accessibility, in general, is a big challenge. A news report found 98% percent of websites to be inaccessible. But now that everyone is consuming education virtually, you don't have a choice--digital platforms especially need to be accessible.

### **As a visually impaired engineer, what message do you want to share with your sighted peers?**

**“You cannot think of accessibility as an afterthought”.** Inculcating accessibility into your program after writing thousands of lines of code is far more impractical than designing it with accessibility in mind. **“People should stop thinking about accessibility as a charity, instead think it as an investment and encourage the specialists who can bring accessibility to the table”.** Just like any other investment, it delivers returns. Even from an objective, profit-driven

perspective, accessibility allows more users or customers to use your service. Innovations that are originally intended for accessibility can grow into something that everyone can use. A simple yet large example of this is Speech To Text. Although it began as an accessibility initiative, it is now a technology that is part of our lives. On the other hand, a thing to be noted is that even top universities in the country do not include accessibility in the computer science courses. That should be changed and accessibility should be made an integral part of the curriculum.

### **Do you have any message for visually impaired students and engineers?**

**“Figure things out, be creative, and innovate yourself”**. Don’t depend on others to make things accessible and get stalled in the process. It is not easy to become an engineer or scientist, but you can do it. Just know that people may not always want you to become an engineer because then they have to adapt and most resources today are not accessible. But if that is what you want to do, no one should stop you.

### **What kind of barriers have you faced and overcome?**

I studied in a school in India which had very little support or resources for the visually impaired. Throughout my schooling, I had to type up a lot of the contents in textbooks as my family dictated aloud to me. However, I believe my struggles have had a positive lasting impact. Such limitations made me innovate with what’s on hand and that attitude helps till date.

Even though some of the challenges and barriers discussed today have been worsened by the pandemic, most of what was discussed has always been relevant. Even before the pandemic, these issues still existed. I think all organizations should be educated on accessibility. Especially in the age of digitization where the technology available to us can improve the lives of so many, it seems obvious and almost imperative that we all work together to design and innovate in a way that is accessible to everybody.