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FEATURED

## Hear2Read Launches Tamil Language Text to Speech Software App

GIOVANNI ALBANESE Jr., India-West Staff Reporter Aug 4, 2016



Suresh Bazaj, a computer science veteran who founded Hear2Read in 2013 to help blind and visually impaired children in India through to Speech software in their native language, has now created an app for it with the help of students at Carnegie Mellon University. By the end of 2017, the FLITE app — available on android devices — will feature 12 Indian languages in TTS, the Indian American entrepreneur India-West. (photo provided)

Throughout his career, Suresh Bazaj, an Indian American computer software and networking professional living in the Silicon Valley of California, has had a yearning to help blind children in India.

After graduating from IIT Kanpur and the University of Michigan, Bazaj spent the better part of four

decades working in the computer software industry, both for major companies as well as startups.

He had an underlying itch that he needed to scratch, however.

“For a long time I was sending money to help support my parents who had been supporting a school for the blind in Varanasi,” Bazaj told India-West.

He retired from the corporate life in 2012 and shifted his focus to giving back. In 2013, Bazaj founded Hear2Read, which helps blind children through Touch To Speak software.

In India, roughly 1.5 million children under the age of 20 are completely blind, Bazaj explained. And with TTS software not able to help kids learn in certain dialects and languages, they were not able to keep up their education on par with sighted children.

“I observed over the years the children (at schools for the blind) still weren’t getting proper education,” Bazaj noted. “They were being relegated to low-paying jobs, destined to a life of poverty.”

Bazaj, who has had retinal detachments in both eyes that were successfully repaired, wanted to change that.

“When I started digging into it, I realized the blind (in the U.S.) go to the same school as everyone else,” Bazaj explained, adding he noticed blind people in the U.S. have high-paying jobs, which wasn’t the case in his native country. “And the reason they are able to keep up with other people and read all the material is because they are using the TTS software for English.

“I wanted to change the outcome I saw from the schools for the blind in India,” he emphasized to India-West. He added that, with his background in the tech industry, he wanted to build a “game-changer” to help the blind in India.

Now, through an app for Android devices created by Hear2Read and a team of students at Carnegie Mellon University, along with CMU professor Alan Black, Indian children will have the capability of TTS software for the major languages spoken in India. The app will expand to Windows devices in the future.

“Making it available as free, open-source software thus was a key goal,” said Black, a professor in the School of Computer Science’s Language Technologies Institute at CMU, in a statement. “People should be able to download this and it should just work. We put a lot of effort into making this accessible and easy to use.”

The Hear2Read project inspired Black and his students to develop a system for doing so repeatedly,

efficiently and for producing user-friendly software, according to a Hear2Read statement.

By the end of the year, the app will service Hindi, Gujarati, Marathi, Kannada, Punjabi, Tamil, Bengali and Telugu. In 2017, it will expand to Assamese, Malayalam, Oriya and Urdu.

The 12 languages account for 93 percent of the people, added Bazaj, though he said he's unsure if the software will add the remaining 10 Indian languages.

"Each language is different, and historically TTS systems have been done one at a time," Bazaj said in the statement. "We looked at commonalities of Indian languages and developed tools to apply the same technology to multiple languages."

The system developed by Black's research team enables creation of a baseline TTS system after recording two to three hours of clear, consistent speech from a native speaker, it added.

Not only will the app, named Hear2Read, be able to help blind children, it will also be used to assist the millions of visually impaired children, as well as elderly people who have become visually impaired in their advanced age, Bazaj noted.

Additionally, the future of Hear2Read's app will aim to offer machine-generated voices to instantly turn e-books into audio versions of the book and will help children learn the native languages of their parents, and overall could serve as a language-learning software, he said.

The app, which runs in real time and without Internet access, is available on lower-income android devices in India as part of the Indian government's 'assisted for disabled persons' program, which helps low-income people with disabilities.

Bazaj, with some support from friends, funds an MS student at Carnegie Mellon University, to the tune of \$35,000 annually. It is the largest expense of the company, Bazaj noted. Hear2Read, a strictly volunteer-run venture, has dozens of supporters to evolve the TTS software but continues to seek additional donors.

And while Bazaj said this app won't make all blind children turn into company heads in the future, he believes it will at least give them a fair playing field.

"I'm not going to say all the children will all become stars, but they will have the same opportunity as sighted children," he said. "With this software, everyone will have the chance to excel."