Voice recognition project recruiting adults with cerebral palsy

By Meg Dickinson

The Speech Accessibility Project is now recruiting U.S. and Puerto Rican adults with cerebral palsy.

Those interested can sign up online.

Funded by Big Tech companies Amazon, Apple, Google, Meta, and Microsoft, the University of Illinois Urbana-Champaign aims to train voice recognition technologies to understand people with diverse speech patterns and disabilities. The project began recruiting people with Parkinson's disease last spring, those with Down syndrome this fall, and more recently, those with amyotrophic lateral sclerosis. The project will also recruit people who have had a stroke.

Researchers at UIUC's Beckman Institute for Advanced Science and Technology are securely recording participants and safeguarding their private information. So far, the project has shared more than 100,000 speech samples with the Big Tech companies, and the data will eventually be available to non-profits and companies who agree to safeguard participants' privacy.

Spencer Hadbavny's cerebral palsy affects his left side and lives with a minor speech impairment.

"I find using technology frustrating when while writing a paper, email, or speech," he said. "I only use my right hand to type on a computer due to the lack of mobility in my left. It would save me time and energy by having tech that would instantly know how I speak."

He said he thinks the Speech Accessibility Project allows people with CP to help make voice recognition technology more user-friendly.

"This project allows many individuals with CP the opportunity to share their own experiences and struggle," Hadbavny said. "Collecting data will help them seek out new communication tech and assist others to get their message across."

Clarion Mendes, a clinical assistant professor of speech and hearing science and a speech language pathologist, believes the project has crucial implications for improving quality of life for those with cerebral palsy.

"CP is the most common motor disability in children and including it in the Speech Accessibility Project is crucial," she said. "Removing some of the barriers to successful communication for folks with CP opens doors to new educational, vocational and recreational pursuits."

Communication can also be a challenge for people with dysarthria, a muscular condition that can impair individuals' ability to speak, Mendes said.

"Paired with the other motor symptoms associated with cerebral palsy, [dysarthria] can make activities of daily living and basic communication challenging and limit opportunities," she said.

In 2008, 18 people with cerebral palsy helped build a set of voice recordings from people with disabilities in Champaign-Urbana. The research project was called the UA-Speech corpus and was led by Hasegawa-Johnson.

“Some of the speech in that database is perfectly intelligible,” he said. “Other contributors considered themselves essentially non-vocal but agreed to contribute recordings of their best attempt to read the prompt texts.”

From its creation until this year, the database was the largest set of recordings of people with dysarthria that could be with researchers, making it a standard benchmark in the field. As a result of Hasegawa-Johnson’s work, speech recognition rates for people with CP have improved by a factor of four.

Now, the Speech Accessibility Project expands beyond Champaign-Urbana to include Puerto Rican and U.S. adults from states other than Illinois, Washington, and Texas. Participants and caregivers will be compensated for their time in the form of Amazon eCodes. Participants will receive a total of $180 in three increments: $60 after recording the 200th sample, an additional $60 after recording the 400th sample, and an additional $60 after recording the 600th sample.

“The goal of the Speech Accessibility Project is that every speech app, distributed by any company or university on any device or web page, will have heard several hundred people with CP before it is ever released as a product,” Hasegawa-Johnson said.

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