Voice Assist for All – Team Amplify Wins the USC CBC/WITH Foundation Hackathon

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#Voices4All

An increasing number of US households are embracing digital voice assistants such as Amazon Alexa, Google Assistant, Cortana and Siri. This rising prevalence of home-based voice assistants has led some healthcare experts to wonder whether Alexa can go beyond just playing music and dimming the lights, to actually helping patients in need. Can we reduce feelings of social isolation in the elderly with a smart speaker app? What about automating speech and voice therapy for children?

Harnessing the power of voice

WITH Foundation and the USC Center for Body Computing co-hosted a Hackathon in mid July that explored the ways that developers could harness the power of voice to help people in need live healthier lives. The Voice Assistants for All Hackathon challenged teams to develop a digital health app that would help those underserved by the traditional US healthcare system. The 24-hour hackathon at the USC Institute for Creative Technologies in Playa Vista, CA. concluding with a pitch from each of the five finalists to a panel of expert judges.

Ryan Easterly, executive director of the WITH Foundation said, “Our goal is to assist in educating the tech and digital health industry about the concept of universal design. We hope to foster a shift from designing for individuals to designing with individuals, and

this Hackathon was a great example of that effort. Voice Assist is part of our daily lives and should meet the needs of adults with IDD."

Dr. Leslie Saxon of the USC CBC stated the mission is to help the *WITH* Foundation and others to create the digital health ramp for our vulnerable populations to "give a voice to healthcare's underserved."

She also believes Voice Assist could be the game changer in health and medical care providing patients, including those with IDD or older seniors, with access and connectivity that achieves their needs of more continuous and intensive care.

And the winner is…

The Hackathon winners were Team Amplify, led by Brian Cohn, a computer scientist with a background in biology, and Chris Laine, a neuro rehabilitation engineer, who designed an interactive adventure platform that delivers on demand speech therapy to children with cerebral palsy.

The winning concept has patients choose their own adventure experience using an engaging mythical and magical world of gamification exercises that incorporate loudness, pitch, duration and phrases and speech. The team wowed the judges with their integration of Voice Assist technology as well as entertainment and storytelling to address a critical therapeutic need for this population. And while this idea was focused on speech therapy for children, Laine explained that using interactive gamification and storytelling for health and therapeutic needs applies to all age groups.

Other winners included:

- Meddi, an intelligent personal companion based on the Alexa platform to remind and encourage patients at home to take their medication. Studies have shown that medication non-adherence costs in the U.S. add up to approximately $290 billion, or 13% of total healthcare spending. In addition, the problem remains a major source of morbidity for elderly patients.
- Team Eidla created a digital companion designed to combat social isolation in older adults. Through Alexa, it transports users to a different planet called Eidla that they can explore and where they can interact with aliens. The program tries to determine whether the person is lonely by asking them related questions during the adventure and will notify family members accordingly.

Hackathon judges were impressed with the ability of teams to address a healthcare need through the use of voice assistants. The efforts demonstrated that seniors and individuals with developmental disabilities could benefit from having a smart speaker at home if programs like the ones presented were further developed.

“As digital health continues to evolve and new models of healthcare delivery are developed, it is crucial that they meet the needs of adults with intellectual and developmental disabilities as well as seniors,” said Easterly. “If digital health meets the needs of individuals with fewer resources… it results in better technology for all, and therefore better healthcare for all.”

Many thanks to the judges from AARP Foundation, Children’s Hospital Los Angeles, Embodied Inc. and the *WITH* Foundation as well as the expert mentors who coached the Hackathon teams: Amazon, California Independent Living Centers, Front Porch, Google, Keck Medicine of USC, Los Angeles Clippers, Tastemade, USC Davis School of Gerontology and USC Institute of Creative Technologies.

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