



Edition 59

Dear friends,

It's not about perfect. It's about effort. And when you bring that effort everyday that's where transformation happens. That's how change occurs -dahnyoga.com

Life goes on with a hope that for every disciplined effort there would be a reward sooner or later.

Happy Reading!!

Regards,

Bhavna Botta

connectspecial.in

Exciting Tech news

iPhone 12 Pro will let see a blind how close another person is

The recently launched iPhone 12 Pro and iPhone 12 Pro Max have a LiDAR scanner that helps a blind person detect how close other people are. The new "People Detection" feature allows to detect how close others are from the user who has low vision issues. A LiDAR scanner can be used to measure the distance to objects in a room. The scanner has been primarily used to improve augmented reality experiences, but Apple is thinking in a whole new direction to use a 3D sensor as assistive technology to help individuals who are suffering from low vision.

Samsung Good Vibes

Developed in India, Samsung's Good Vibes helps the deafblind to have two-way communication with others using their smartphones. The app uses Morse code to convert vibrations into text or voice and vice-versa. The Good Vibes app can be downloaded from the Samsung Galaxy Store as well as from the Google Play Store.

DotBook

Developed by IIT-Delhi researchers, “DotBook” is India’s first Braille laptop for the visually-impaired. Instead of a screen like regular laptops, DotBook uses Braille, a tactile system of reading and writing for use by the blind or visually impaired. Available in two models: the 40Q variant has 40 characters per line and offers a conventional QWERTY keyboard and a Braille keyboard and the 20P version comes with 20 characters per line and has only a Braille keyboard. Both models come equipped with the support for basic applications like email, a web browser and a calculator.

Picture shows person using Dotbook



TalkBack braille keyboard on Android

Google has designed a TalkBack braille keyboard on Android that allows people who are visually impaired to type on their phones without requiring extra hardware. The keyboard uses a six-key layout and each key represents one of six braille dots. It supports Braille Grade 1 and Grade 2 and is only available in English at the moment.

The Talkback braille keyboard can be turned on through the accessibility section within the settings of your Android phone. The keyboard supports all devices that run Android 5.0 or later

Wearable sensor to help ALS patients communicate

Researchers have designed a skin-like device that can measure small facial movements in patients who have lost the ability to speak.

A team of MIT researchers has now designed a stretchable, skin-like device that can be attached to a patient's face and can measure small movements such as a twitch or a smile.

People with Amyotrophic lateral sclerosis (ALS) suffer from a gradual decline in their ability to control their muscles. As a result, they often lose the ability to speak, making it difficult to communicate with others.

A team of MIT researchers has now designed a stretchable, skin-like device that can be attached to a patient's face and can measure small movements such as a twitch or a smile. Using this approach, patients could communicate a variety of sentiments, such as "I love you" or "I'm hungry," with small movements that are measured and interpreted by the device.

OrCamMyEye

For People Who Are Blind or Visually Impaired

OrCam MyEye is a revolutionary voice activated device that attaches to virtually any glasses. It can instantly read to you text from a book, smartphone screen or any other surface, recognize faces, help you shop on your own, work more efficiently, and live a more independent life! OrCam MyEye conveys visual information audibly, in real-time and offline.

Instantly reads printed and digital text aloud from any surface. The OrCam MyEye is the only wearable assistive technology device that is activated by an intuitive pointing gesture

Expressive Pixels: A new visual communication platform to support creativity, accessibility, and innovation

Originally featured at [access and inclusion through technology](#)

<http://www.accessandinclusion.news/#/>

The need to express oneself is innate for every person in the world, and its roots run through art, technology, communication, and the acts of learning and building things from the ground up. It's no coincidence, then, that a new platform being released by Microsoft Research, called Expressive Pixels, stems from this belief. Expressive Pixels introduces an authoring app combined with open-source firmware, peripherals, documentation, and APIs that allow users and makers to create animations and then display them on a range of colorful LED display devices.

With applications in areas spanning from accessibility to productivity, creativity, and education, the technology's potential for growth is limited only by the imaginations of its users and community—and the app can now be downloaded for free from the Microsoft store. The concept began with a simple idea—empowering individuals who require alternative tools for communication with others in their lives. The collaboration began in the Microsoft Research Enable Group in 2015 and has since grown to include members of the Microsoft Research Redmond Lab

and the Small, Medium, & Corporate Business team. Its unique path to realization has led the Expressive Pixels team to embrace the creation of hardware display devices that integrate with other maker devices, an educational opportunity with support for Microsoft MakeCode, and a full open-source release of the firmware for developers.

Origins: The power of an idea to enrich communication and people's lives

Expressive Pixels did not begin with a hardware or software concept. Instead, it emerged from a participatory design collaboration between the Enable Group and members of the ALS Community. Enable researchers and technologists partnered closely with people living with ALS (PALS), caregivers, families, clinicians, non-profit partners, and assistive technology companies to identify, design, and test new experiences and technologies designed to improve the lives of people and communities affected by speech and mobility disability.

One central theme the team tackled was enhancing the experience of augmentative and alternative communication (AAC) systems, which allow people with limited mobility and speech to control computers and speech devices using their eyes, a head mouse, or other alternate forms of access based on individual needs. Many PALS rely on eye tracking or head mouse input for computer access and synthetic speech in the late stages of disease progression

It made sense for the team to invest heavily in eye tracking as a primary input because the eye muscles are typically more resilient to ALS than the muscles needed for movement, speech, swallowing, and breathing. Eye-tracking technologies and AAC systems have improved over the years, but the barriers to access, entry, and adoption remain insurmountable for many users, leading to device abandonment and social isolation when users are no longer able to speak or gesture.

Internally, the Enable team worked closely with collaborators across the company, including researchers in the Microsoft Research [Ability team](#) and engineers in the Microsoft Research Redmond Central Engineering Test Team.

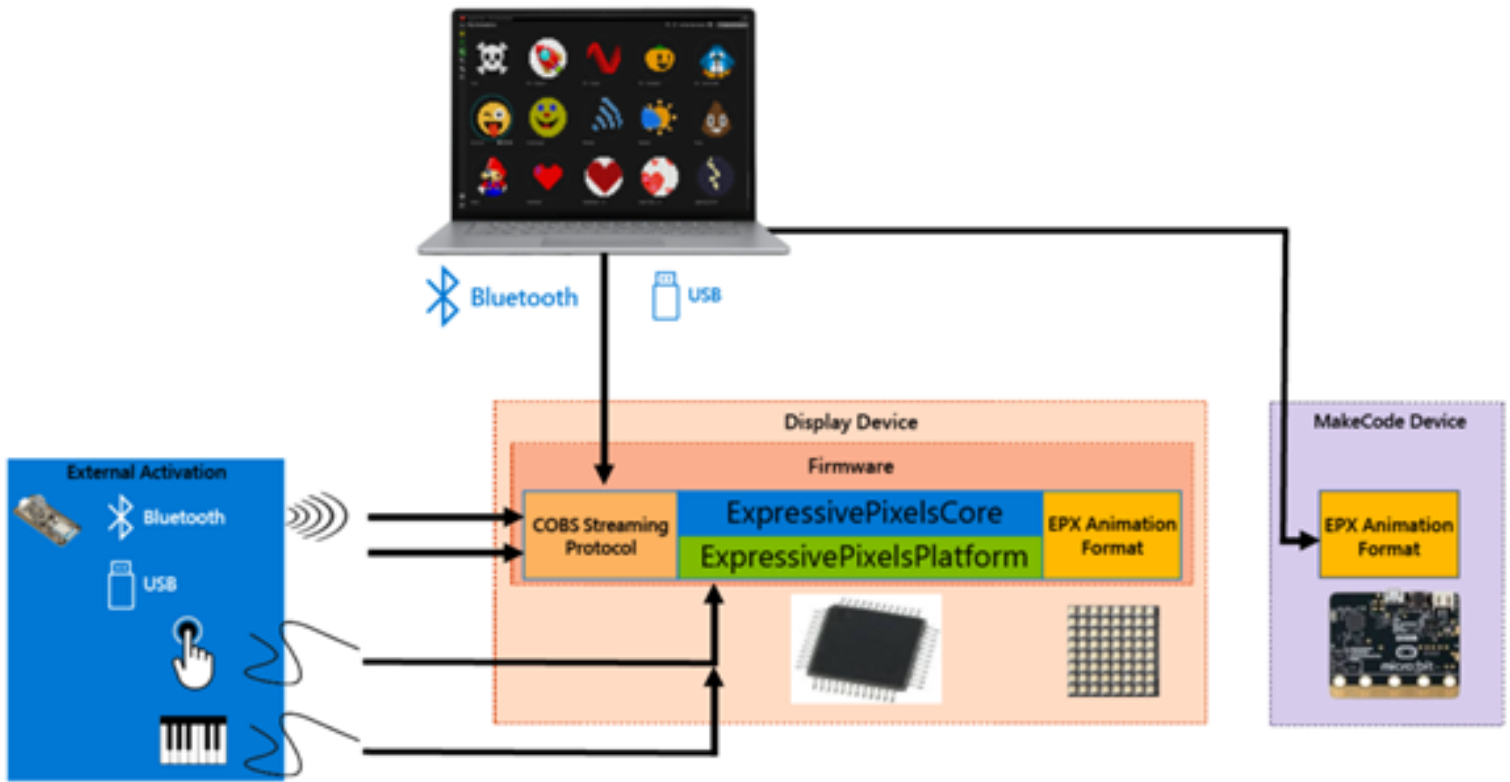
The team suspected that secondary, LED-based displays could serve as an important adjunct to AAC-based communication by serving as a visual proxy for body language, social cues, and to convey emotion—all critical aspects of nonverbal communication that can be compromised by ALS.

They conducted research around expressivity and creative endeavors central to the human experience, such as playing or composing music.

They developed [hands-free, multi-modal interfaces and musical instruments](#), built an innovative speech keyboard with an integrated awareness display, and investigated various approaches to improve speed and accuracy for eye-tracking input. The speech keyboard was a key reference design for Windows Eye Control, and the awareness display seeded the idea for Expressive Pixels.

After brainstorming with the Enable team on how to develop a prototyping environment to author animations for their awareness display, Gavin Jancke—General Manager Engineering, Microsoft Research—was hooked on this project right away, so much so that he devoted a couple years of his hobby time to make Expressive Pixels a reality.

The outcome is the Sparklet: a Bluetooth-capable high-resolution display, that was battery powered, in a single package.



Picture description -Expressive Pixels platform diagram, consisting of external activation devices and connections, the app, firmware, LED display device, and MakeCode devices.

Members of the Expressive Pixels team are hustling to test 3D-printed mounts and various other designs for makers and the community to use for modification, and they have already created prototypes for alternate switch access and eye tracking triggering. Designs for these are and will continue to be released for makers and creatives to use and modify along with the software. Down the road, the dream for Expressive Pixels includes integration with Windows Eye Control and other universal productivity scenarios.

Coming full circle, the Enable Group has recently been mentoring student teams at University of Washington and University College London to develop a collection of eye tracking-based applications built on top of eye-tracking APIs and samples the team released for developers. Projects included an eye-tracking piano interface, a drawing app that allows users to create mandalas and other shapes with their eyes, and two eye-tracking games. They plan to introduce Expressive Pixels to the next group of students and are excited to see where their imaginations will take the platform in the future.

Acknowledgments-Expressive Pixels and its winding journey could not have been possible without so many people. We are forever inspired by the collaborators, partners, advisors, and friends who have dedicated their time and energy in service to our mission.

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