

Editorial Meeting Minutes/Resolutions - August 1, 2023

I. Continue to capitalize 'Big Data'

1. Forbes - no
2. NYT - yes
3. WSJ – no
4. Telegraph – yes
5. Wahington Post - yes

II. Continue to capitalize 'Big Pharma,' 'Big Ag,' etc.

1. Merriam Webster – yes
2. Chicago Manual of Style – yes

III. Continue to capitalize 'Internet of Things

1. Microsoft - yes

IV. Hyphens, dashes - Use small 'n-dash (-),' not long 'm-dash (–)'

Progress in single cell sequencing has occurred rapidly in recent years.
Single-cell sequencing has rapidly progressed in recent years.

V. Interviews/Quotes

Valence Vibrations AI real-time emotional subtitles cut through the chatter

Oladimeji Ewumi

Jul 26, 2023

STANDFIRST: The recent crop of AI startups spans the gamut of sectors. Real-time emotional subtitling firm Valence Vibrations eases communication among diverse groups. Its intriguing line piqued The Yuan's interest. Its CEO Chloe Duckworth tells all in this exclusive interview with The Yuan.

LISBON - Valence Vibrations is an early-stage artificial intelligence (AI) startup that delivers emotional subtitles in real-time conversations to enhance each person's voice and improve human connection across diverse communities. In an interview with The Yuan contributor Oladimeji Ewumi, Valence Vibrations **Chief Executive** Chloe Duckworth shares some insights on how the Los Angeles-based company uses AI to help people better understand communication across various neurodiverse spectrums.

The Yuan: Can you please share a little bit about yourself?

Chloe Duckworth: I am the co-founder and **CEO** of Valence Vibrations, an emotion AI startup delivering emotional classifications in real-time conversation to improve communication and promote empathy across diverse demographics of

people, including neurotypes. Our company is improving emotional communication in people with different vocal or voice prints.

The key challenge right now in the community is that emotional communication is highly demographic-specific. When speaking with someone who has a different voice because they have other intersections of identity - whether that be race, neurotype, age, gender, or something else - it changes how one's own voice sounds as well as how one conveys emotions, which ultimately affects one's ability to interpret the feelings of people one is speaking with and empathize with them. To empathize with someone in a conversation, one must understand their feelings. That is highly demographic-specific, and our company is creating emotional subtitles to help bridge that gap.

The Yuan: What personal journey led you to your position as **CEO and Co-founder** of Valence Vibrations?

Chloe Duckworth: I am motivated by democratizing access to health and wellness and am currently doing so by building neurodiversity-affirming technology to honor the unique power of each person's voice. I initially got my start in neuroscience at the **University of Southern California [USC]**.

I studied computational neuroscience and took a nontraditional path in school. I graduated in two and a half years, hustling while maintaining a long-term goal of working full-time on my startup. I also happened to meet my co-founder, Shannon Brownlee, while I was at **USC**. We lived across from each other in the dorm and bonded over a love of neurotics and AI. Ultimately, we ended up entering a **haptics** hackathon together through a company called Neosensory. Neosensory's mission was to help deaf and partially deaf people better interpret sounds as vibrations by using the company's Neosensory Buzz device. When we entered their hackathon, we did so with the idea of expressing emotions as a real-time vibrational signal on the band. The idea grew from there.

We later ended up creating Valence Vibrations from that initial hackathon and pivoted into launching an app for the Apple Watch last December. We are currently working on application programming interfaces licensing and video conferencing plug-ins with more extensive neurodiverse hiring programs, communication, and human resource applications. That is why we initially started with this focus on promoting increased empathy across neurotypes.

A key challenge that we recognized early on is that, in general, the most underrepresented or marginalized person in the room is almost always the one who bears the greatest burden in having to accommodate the normative communication style of the people around them. When thinking about this from a neurodiversity perspective, people who are, e.g., autistic or suffering from

attention deficit/hyperactivity disorder [ADHD], often must mask their true expressions - whether it be facial expressions or vocal tone - to fit in with more of a neurotypical communication standard.

The key takeaway from this is that there have to be improved methods of communicating with one another in these virtual environments so that everyone's communication style is respected, and people can feel comfortable using their own natural, authentic voice and forms of expression to show up equitably in any given environment. That is the problem our company is trying to solve with our technology.

The Yuan: How is Valence Vibrations using AI to develop real-time emotional subtitles for neuro-diverse people?

Chloe Duckworth: As an emotion AI company creating real-time emotional subtitles, we initially launched an Apple Watch with a haptic and visual feedback mechanism. When the user has the Apple Watch application on, it will analyze the audio in his or her surrounding environment, helping him/her better interpret his/her emotions and those of others. It will go back and forth on a conversation, labeling emotions with an animation on the watch face but also providing haptic feedback using a vibration associated with each emotion. This means that the user can literally feel the room's vibes as a vibration on his/her wrist.

An angry vibration is felt as an abrupt, high intensity tap, whereas a happy one is more of a light, fluttery vibration that increases in intensity as it continues its pattern. This helps people to quickly gauge the inflection points in a conversation not only when their own emotions are changing, but also when the feelings of the people they are speaking with begin to change.

Specifically, the population who stands to benefit the most from this often suffers from something called alexithymia. Alexithymia is an emotional perception deficit that commonly co-exists with autism and ADHD, as well as those with anxiety disorders, post-traumatic stress disorder, traumatic brain injury, stroke, and other neurotypes. Not everyone within this category has alexithymia, but it is estimated to affect around 10 percent of the world's population. Even for people who do not have alexithymia, there is often still that struggle to interpret emotions from people in a different racial demographic or neurotype, even if they are neurotypical. So, the next products our company will launch are more focused on B2B [business-to-business] applications, where we are looking to create equitable ways for people to see emotional subtitles in virtual environments.

Our company initially focused on hiring and communication applications but building out a full suite, though we ultimately want to become an open-source, ubiquitous emotional subtitle platform. This may happen in the same way that

closed captioning, subtitles, and all-to text blew up during the pandemic. Today, these have become integrated into every virtual space, and we want to become the emotional context version of that. And in AI, all our machine learning [ML] is built in-house. We are using on-edge ML to capture audio information and classify the tonal patterns within that information depending on a person's demographic. Our models are optimized for North American English. This includes the complete vocal diversity of North America for English speakers - regardless of their first language, their accent, age, gender, neurotype, and location within the country - but initially just optimized for the English speakers in America and Canada.

- VI. **Interview questions are to be bolded; all other portions appear plain text, e.g.:**
The Yuan: What personal journey led you to your position as CEO and co-founder of Valence Vibrations?

Chloe Duckworth: I am motivated by democratizing access to health and wellness and am currently doing so by building neurodiversity-affirming technology to honor the unique power of each person's voice. I initially got my start in neuroscience at the USC [University of Southern California].