

ChatGPT For Autism? Researchers Work With AI To Decode Children's Behavior

by Emily Woodruff, The Times-Picayune | The New Orleans Advocate/TNS | December 10, 2024



NEW ORLEANS — After 18 years of trying to decode his children's behavior, 54-year-old Christopher Moore can usually understand what they need. But like a lot of parents of children with autism, he wonders who will take his place when he's gone.

Three of his four children have autism. Two are mostly nonverbal. As they were growing up, it was often difficult to figure out their cues — whether they were hungry, hurting or bored. Years of different therapies tried to bridge the gap but were focused on the child with autism adapting to typical communication styles, said Moore, who lives in Youngsville.

In a University of New Orleans class on how computers learn to communicate with humans — programs like ChatGPT or Google's Gemini, for example — Moore had his light bulb moment.

"Well, I think we got this backwards," said Moore, who is pursuing his doctorate in computer science after being injured working offshore in the oil field. "And I think AI can help."

From those initial conversations, Moore and a team of researchers, including UNO professors Shreya Banerjee, Md Tamjidul Hoque and Tracey Knaus, will embark on a project that uses machine learning to analyze the behavioral patterns of kids with autism, from eye movements to gestures.

Their work could benefit thousands of families. Nearly 70,000 adults in Louisiana have autism, according to estimates published in the Journal of Autism and Developmental Disorders in 2020.

It's unclear how many children in Louisiana have autism, but experts say the number continues to rise. Over 5% of children ages 3 to 21 receiving special education services in Louisiana were diagnosed with autism in 2015, a significant jump from 2000, when just 1% of children had that diagnosis. Nationally, 1 in 36 children had autism in 2020, an increase from 1 in 44 just two years earlier, according to the Centers for Disease Control and Prevention.

"Autism is here to stay," said Lisa Settles, program director and lead psychologist for the Tulane Center for Autism and Related Disorders. "It just keeps going up and up every time they do prevalence and incidence studies."

The goal is to give the parents and caregivers of young children with autism advice on what their child is experiencing, what kind of behavior might come next and how the caregiver can help the child, reducing the frustration that comes with not being able to communicate their needs.

"It's translating that child's behavior to language for the parents or caregiver," said Hoque.

Their research is funded with a \$300,000 grant from the Louisiana Department of Health and will focus on children ages 2 to 5.

Creating a database of behavior

Setting up such a program will be complicated because there is no database of autism behavior. Moore anticipates that part will be the hardest.

"I'm pretty well versed in my kids," said Moore. "But everyone is different."

Autism is a notoriously complex diagnosis to make because of the many ways the condition can show up in affected individuals.

"I've probably evaluated over 3,000 kids in my career," said Settles. "I've never seen two that look exactly the same."

A lot of people refer to autism as a spectrum. Settles often thinks of it as a sound mixing board.

"You can make multiple songs just by moving all the different buttons and keys," said Settles. "And that's sort of how autism is."

Variability is a challenge for artificial intelligence, which relies on identifying patterns to generate responses. The UNO project will collect photos, video, audio and interpretations from parents, therapists and caregivers to help build the autism behavior database.

Bridging the gap

The common thread of communication challenges among people with autism relates back to a concept called "theory of mind," said Settles. People with autism tend to have trouble with the ability to understand that other people have different thoughts, feelings, emotions, motivations, perspectives.

"A lot of the communication breakdown is because there's an expectation, due to faulty cognition, that you should know what I need anyway," said Settles.

That's where Moore imagines an app could help bridge the communication gap. He imagines a future in which a struggling, burnt-out caregiver could take out their phone, snap a picture or video and get insight into the behavior.

Settles cautioned that parents and caregivers should still seek to learn their child's cues and communicate with them without the use of technology — but said such a tool could be especially useful when people with autism are trying to communicate with law enforcement or in other settings.

"I've been an expert on some cases where individuals have gotten hurt very badly, in group home and psychiatric hospital settings because they couldn't communicate," said Settles.

For Moore, it's reassurance that when he's gone, someone will be able to understand what it has taken him decades of interactions to grasp.

"Autism is just another language," said Moore. "It's a language we don't know yet."

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