

Enhancing Autism Support With AI-Driven Emotional Intelligence Assistants

Ria Pahuja

 <http://orcid.org/0009-0001-8341-6794>

Christ University, Bangalore, India

Abilash K.

 <http://orcid.org/0000-0002-4341-2385>

Christ University, Bangalore, India

ABSTRACT

Individuals with ASD often face challenges in understanding and expressing emotions, which can negatively impact their social interactions. This study explores how AI technologies present a promising solution to support these individuals in developing emotional intelligence skills. By utilizing AI virtual assistants to provide tailored social cues and emotional feedback, individuals with ASD can improve their ability to navigate social situations and understand other's emotions effectively. These assistants are designed to analyze real-time social scenarios and offer immediate feedback, helping individuals with ASD understand social cues and respond appropriately. Through interactive exercises and visual prompts, individuals gradually improve their emotional comprehension, making meaningful connections. AI companions also help these individuals understand the reasons behind emotions, fostering empathy. Through interactive dialogues and scenario-based simulations, individuals practice responding to emotional situations, empowering them to navigate social interactions confidently.

INTRODUCTION

Brief on Autism Spectrum Disorder

For every person, autism spectrum disorder (ASD) presents a different path. Consider it similar to a challenging puzzle in which every piece symbolizes distinct obstacles and abilities. Some people find it difficult to express their thoughts and feelings when they cannot communicate. Repeated behaviors can

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offer comfort in a world that frequently feels overwhelming, and navigating social situations can feel like navigating a maze (Loucas, 2015).

The number of children receiving an ASD diagnosis each year is increasing, according to the CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network, underscoring the increased knowledge and comprehension of this disorder.

For example, consider that 36 kids have Autism Spectrum Disorder (ASD), and knowing that each individual with ASD is distinct, all 36 kids will be possessing a distinct set of abilities and challenges. That's why specialized assistance and interventions are so important. It's similar to giving everyone the appropriate tools for their toolbox, enabling them to get around and realize their full potential. Because each person has a ton of potential that is just waiting to be realized despite the difficulties.

Technologies to support individuals with ASD

Artificial intelligence (AI) is a cutting-edge technology that has demonstrated promise in helping people with autism spectrum disorder. Artificial intelligence (AI) describes how machines, especially computer systems, mimic human intelligence processes. AI systems are capable of being taught to examine and comprehend data, identify trends and behaviors, and make judgments using that knowledge. AI is an important tool for helping people with ASD because of its speed and efficiency in processing and comprehending complex data. Artificial intelligence (AI) can help people with ASD in many different ways. The creation of individualized treatment plans is a typical use of AI in the field of autism intervention. AI systems can develop customized intervention plans that are suited to a person's needs and abilities by evaluating data on that person's behaviors, preferences, and progress. More successful interventions and improved results for people with ASD may result from this tailored approach. Using social robots is a significant additional way AI can help people with ASD. Artificial intelligence (AI)-driven gadgets known as social robots are made to engage and socialize with people. Social robots can offer a secure and dependable setting for people with ASD who may find it difficult to engage with others to practice and improve their social skills. In order to help people with ASD better navigate social situations, these robots can also be programmed to offer real-time feedback and assistance. AI can help people with ASD in educational settings in addition to individualized therapy plans and social robots. AI-powered educational technologies can offer customized learning experiences that are suited to the strengths and challenges of students with ASD, allowing them to advance academically at their own pace. In order to help educators and parents decide how best to assist a student's learning and growth, these tools can also monitor their students' progress and give them feedback.

BACKGROUND

AI in Autism Support

AI technologies have been increasingly utilized to create tailored support systems for individuals with ASD. These technologies range from AI-driven social robots to wearable devices that provide real-time feedback and assistance. AI's ability to process and analyze large amounts of data quickly makes it ideal

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