An Abstract

On

ADAPTIVE TECHNOLOGY FOR AUTISM SUPPORT

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ADAPTIVE TECHNOLOGY FOR AUTISM SUPPORT

ABSTRACT

Adaptive Technology for Autism Support is an AI-assisted, cross-platform application designed to support children aged 6–12 years with Autism Spectrum Disorder (ASD). The primary objective of the system is to provide a personalized, sensory-friendly learning environment that adapts to a child's emotional and attentional state.

The application integrates basic emotion recognition techniques using facial expressions, eye-focus patterns, and speech-based cues to estimate the child's engagement level. Based on this analysis, the system delivers supportive responses through a virtual avatar, helping children regulate emotions and maintain focus. Interactive, game-based activities are incorporated to enhance cognitive, emotional, and social skills in a low-stress and engaging manner.

In addition, the system includes progress tracking features and caregiver support tools that enable parents and educators to monitor development and participation. A simple nutrition tracking module is also included to encourage healthy habits. Developed using Flutter, the application offers a consistent and calming user interface across multiple devices, making it suitable for both home and classroom environments.

By combining machine learning concepts, computer vision techniques, and ethical design principles, this project aims to create an adaptive and secure support system that promotes emotional awareness, encourages independence, and improves social interaction for children with ASD.

PROJECT GUIDE

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