Codictive 3.0 State-Level Hackathon

Basic Details of the Team and Problem Statement

PS Code: PSC-ET-08

Problem Statement Title: AI-Based Adaptive Learning System – Implement an AI-driven platform that customizes learning content based on students' performance and engagement.

Team Name: AlgoWizards

Team Leader Name: Harshit Malviya

Institute Name: Lakshmi Narain College of Technology, Bhopal

Theme Name: EduTech

Team Member Details

Team Leader Name: Harshit Malviya

Branch: B.Tech. Stream: CSE Year: III

Team Member 1 Name: Deepanshi Mehra

Branch: B.Tech. Stream: CSE Year: III

Team Member 2 Name: Prerak Gupta

Branch: B.Tech. Stream: CSE Year: III

Team Member 3 Name: Rajnandini Tasre

Branch: B.Tech. Stream: CSE(AIDS) Year: III

Team Member 4 Name: Ravi Baraskar

Branch: B.Tech. Stream: CSE Year: III

Introducing: The Empathic Learning Companion (SenseiAI)

Revolutionizing education through personalized emotional AI, our Empathic Learning Companion adapts to individual student needs in real-time, fostering a more engaging and effective learning experience. By understanding and responding to students' emotional states, we aim to create a supportive and dynamic learning environment that promotes comprehension, retention, and a genuine love for learning.

by Team AlgoWizards

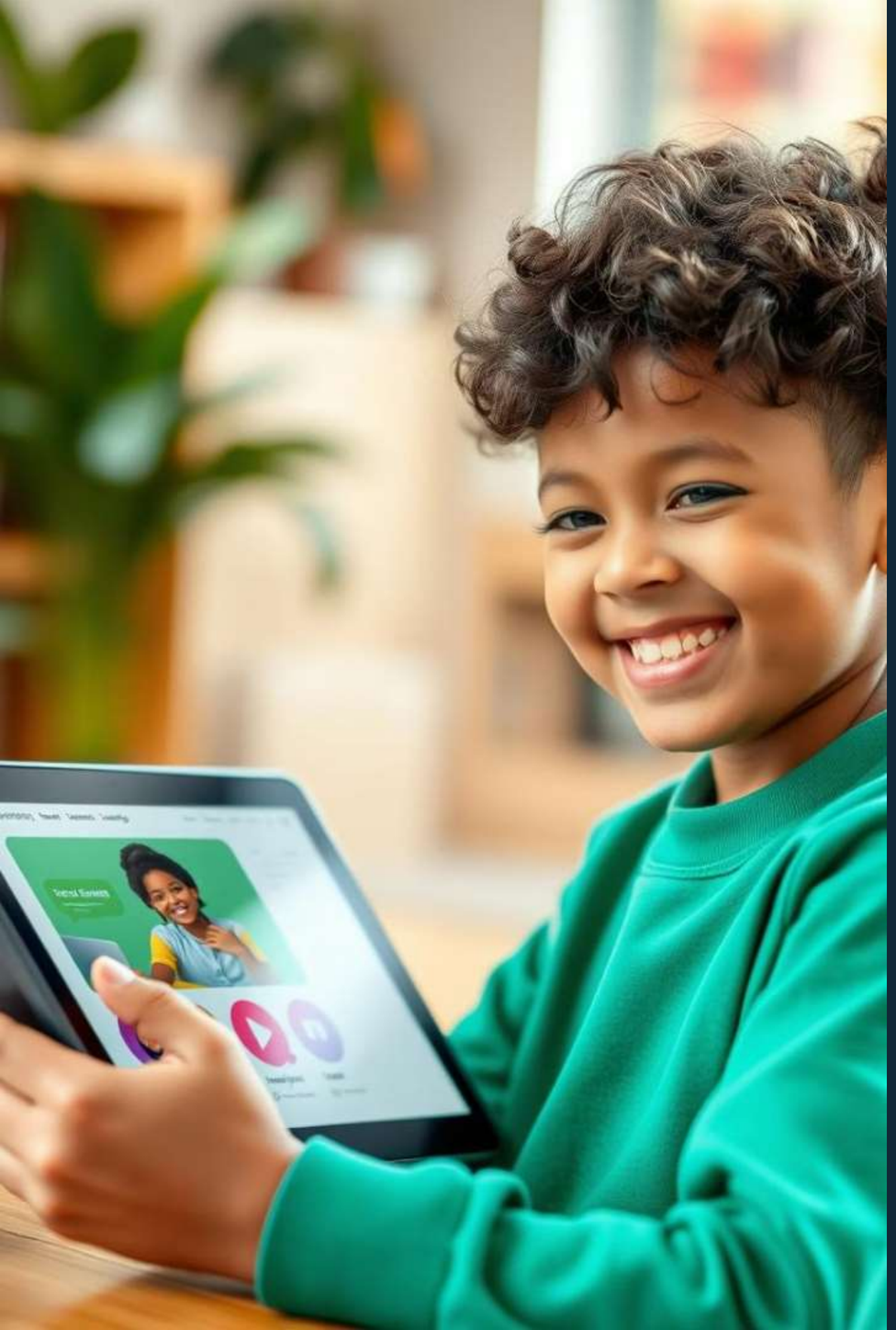
The Problem: One-Size-Fits-All Education

Failing Traditional Methods

Traditional learning methods often fail to address the emotional state of students. When content is too difficult or uninteresting, students disengage, leading to frustration and decreased comprehension. A generic approach cannot cater to individual needs.

Concerning Statistics

The national average course completion rate stands at a mere 58% (Source: National Student Clearinghouse Research Center). This highlights the urgent need for more personalized and emotionally intelligent educational solutions to boost course completion.



Our Solution: Real-Time Emotionally Adaptive Learning

Facial Emotion Detection

Identifies emotions such as confusion, boredom, and frustration in real-time through facial cues.

Voice Sentiment Analysis

Gauges a student's emotional state through speech patterns and sentiment analysis.

Adaptive Teaching Style

Dynamically adjusts the pace, content, and format of lessons based on emotional feedback.

Generative AI Integration

Creates personalized stories and quizzes from textbook content to enhance engagement.

Our pilot program demonstrated a remarkable 35% increase in student engagement, showcasing the effectiveness of our emotionally adaptive approach. By responding to students' emotional cues, we can create a supportive learning environment.

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How It Works: A Multi-Modal Approach

Data Acquisition

Captures facial expressions and voice input using a webcam and microphone.

Emotion Analysis

AI algorithms analyze the collected data to identify emotional states.

Content Adaptation

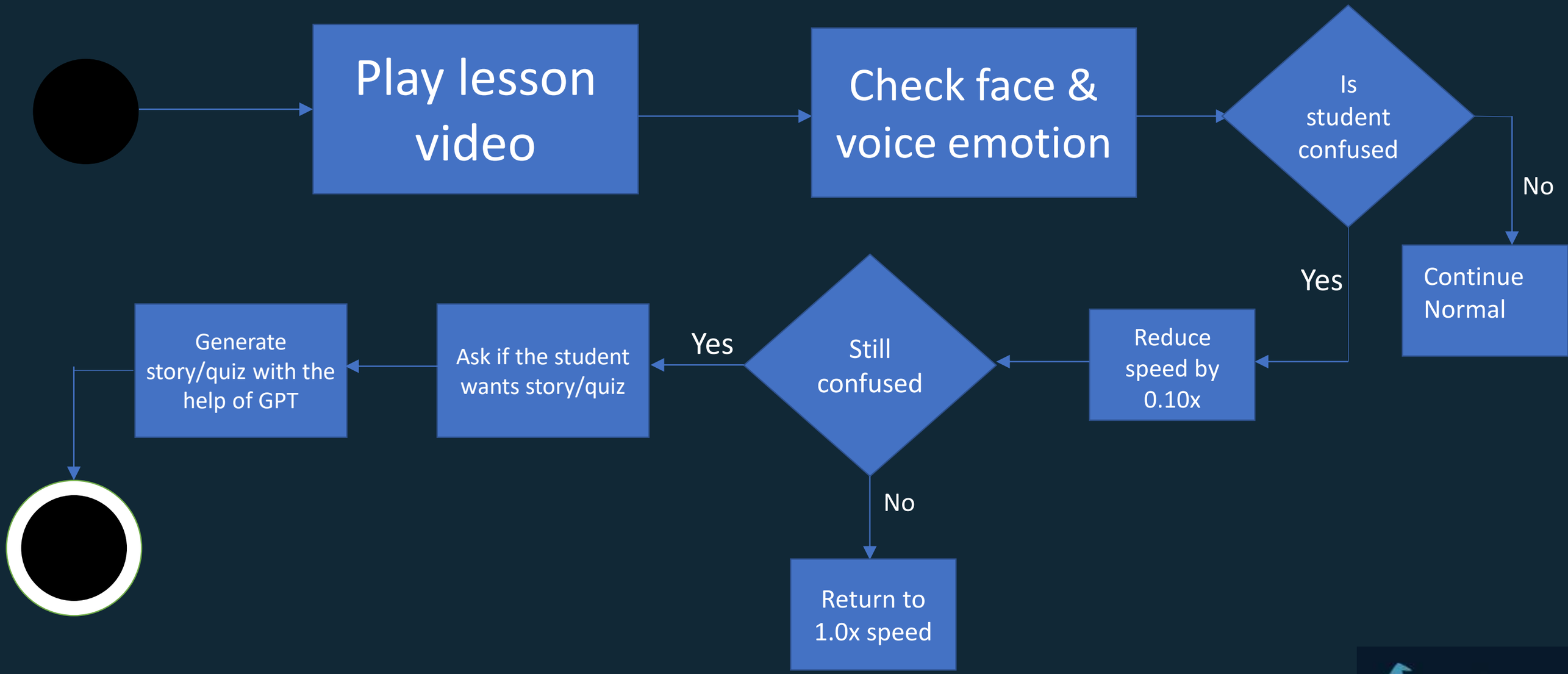
AI dynamically adjusts the content based on detected emotions.

Feedback Loop

Continuous monitoring and adaptation for personalized learning.

In beta testing, our approach resulted in a significant 28% reduction in student frustration rates, highlighting its ability to create a more positive and effective learning experience. This multi-modal approach creates a personalized experience.

Activity Diagram



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