EduLlama

LEARN MATH SMARTER, NOT HARDER

TEAM : T-REX

Problem Statement

Problem: Many students struggle with complex JEE-level math problems due to limited personalized support.

•**Impact**: Lack of detailed, interactive, and affordable tutoring solutions hinders math comprehension for students.

•**Statistics**: The online tutoring market has seen substantial growth, projected to reach $12 billion by 2025.

Solution

- **AI Math Tutor:** An interactive, AI-powered tutor that provides step-by-step solutions to complex math problems.

- **Unique Features:**
  - **Multiple LLMs:** Utilizes Meta's open-source Llama 3.1 and 3.2 with vision-instruction models for enhanced problem-solving capabilities.
  - **Mixture of Agents (MoA):** Together AI's architecture enables high-accuracy results by combining the strengths of various models.
  - **Open Interpreter Integration:** Ensures calculations are accurate and minimizes hallucinations, providing reliable solutions.
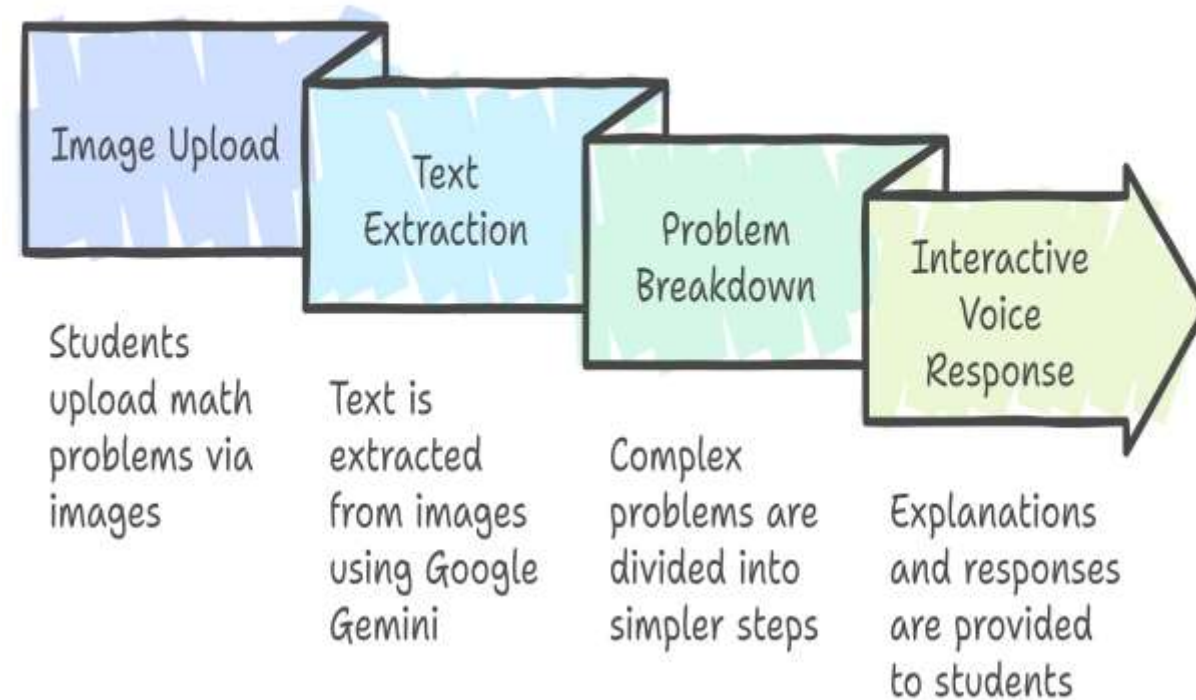
Tech Stack Used

- **LLM Models:** Llama 3.1 and 3.2 (Meta); Together AI's MoA for enhanced accuracy.

- **Speech-to-Text and TTS:** Whisper for speech-to-text conversion and ElevenLabs for high-quality text-to-speech output. Simulating Realtime conversations .

- **Inference Speed:** Together AI's high-speed inference ensures quick responses, creating an engaging learning environment.

How It Works?

- **Process:**
  - **Image Upload:** Students can upload math problems via images; text is extracted using Google Gemini.
  - **Problem Breakdown:** Complex problems are divided into simpler steps for clarity and better understanding.
  - **Interactive Voice Assistant:** Groq's Whispher Lagrge model and ElevenLabs TTS provide explanations and responses to student queries, enhancing the learning experience.

AI Math Tutor Process

Image Upload
Students upload math problems via images

Text Extraction
Text is extracted from images using Google Gemini

Problem Breakdown
Complex problems are divided into simpler steps

Interactive Voice Response
Explanations and responses are provided to students

Features of EduLama

Mixture of Agents

Combines various models for high-accuracy results.

Open Interpreter

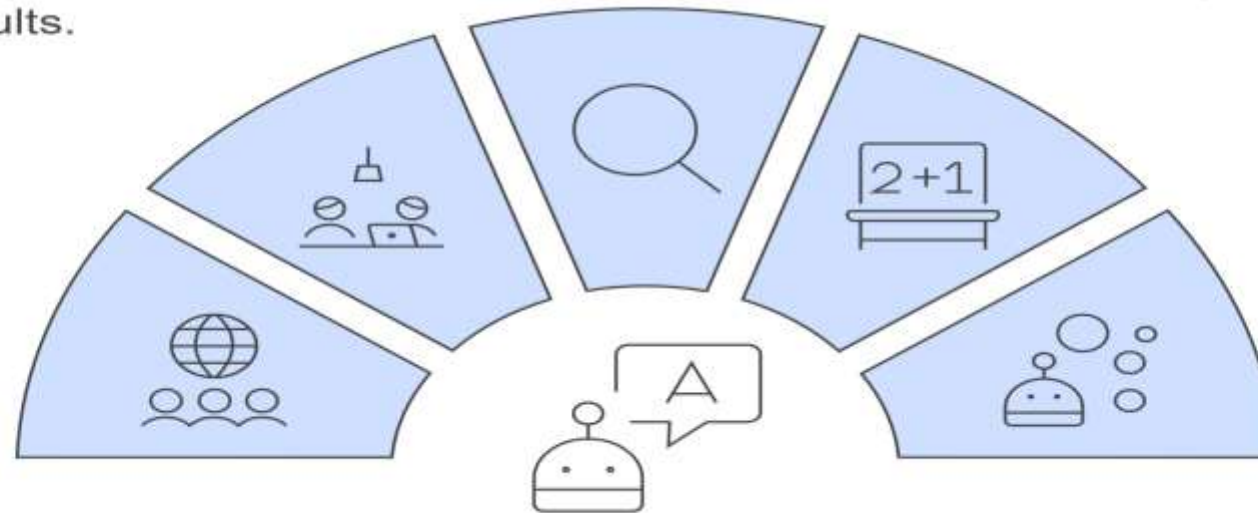Ensures accurate calculations and minimizes errors.

Image Upload

Allows students to upload problems for analysis.

Multiple LLMs

Utilizes advanced language models for enhanced problem-solving.

Interactive Voice Assistant

Provides explanations and responses to enhance learning.

Now let's take a look at the demo