Learning Path by TailorTeach

Motivation

Traditional education often adopts a one-size-fits-all approach, overlooking the unique academic backgrounds and experiences of individual students. This can lead to some students feeling overwhelmed while others remain unchallenged.

TailorTeach aims to bridge this gap by offering personalized learning paths. By analyzing a student's performance through an AI-generated exam, it identifies areas of strength, topics needing improvement, and subjects requiring further exploration. This ensures that each learner receives a tailored roadmap, optimizing their educational journey.

Simple User Guide

1. **Enter Topic**: Input the subject you wish to explore (e.g., "Large Language Models", "ChatGPT").
2. **Start Exam**: Click on "START EXAM" to generate a customized assessment.
   Complete Assessment: Answer all 10 multiple-choice questions.
3. **Generate Learning Path**: Click "Create Learning Topic Tree" to receive your personalized learning roadmap.
4. **Review Results**: Analyze your strengths, areas for improvement, and topics to explore further.

AI-Generated Exam

Leveraging OpenAI's API, TailorTeach crafts a concise exam comprising 10 multiple-choice questions, each with four options. This assessment functions similarly to a placement test, gauging the user's knowledge level in the selected subject area.

Learning Topic Tree

Post-assessment, TailorTeach generates a **Learning Topic Tree** that categorizes subtopics into:

- **Strengths**: Areas where the learner demonstrates high proficiency.
- **Areas for Improvement**: Topics that pose challenges or confusion.
- **To Be Explored**: Subjects the learner may not have encountered yet.

This structured approach allows learners to focus on areas needing attention while reinforcing their strengths, leading to efficient and effective learning.

Evaluation & Limitations

While TailorTeach performs commendably, certain limitations have been identified:

- **Model Accuracy**: The current use of **gpt-3.5-turbo** may result in occasional inaccuracies, especially in mathematical computations. Upgrading to **gpt-4.0** is recommended for enhanced precision.
- **Response Formatting**: Inconsistent formatting in OpenAI's responses can lead to parsing difficulties, causing potential errors in the learning path generation.

Additional Notes

TailorTeach has been tested with topics such as:

- **Large Language Models**
- **ChatGPT**
- **Neural Networks**

These subjects have demonstrated effective performance within the system.