

THE ROLE OF AI IN PERSONALIZING LEARNING EXPERIENCES IN ONLINE EDUCATION

Abstract

In this study, we explore the role of AI in personalizing learning experiences within online education by applying various machine learning algorithms to a dataset designed to tailor educational content. Our analysis reveals that Logistic Regression achieved a high accuracy rate of 96% in predicting personalized learning outcomes.

Further enhancement through a pipeline approach identified the AdaBoost classifier as the most effective model, achieving an outstanding accuracy of 98.8%. The use of this advanced model highlights the capability of AI to refine the personalization process, ensuring highly tailored educational experiences for each learner.

These findings underscore the potential of AI to significantly improve the customization and precision of learning experiences. By leveraging advanced machine learning models, educational platforms can offer more engaging and effective educational solutions compared to traditional methods.

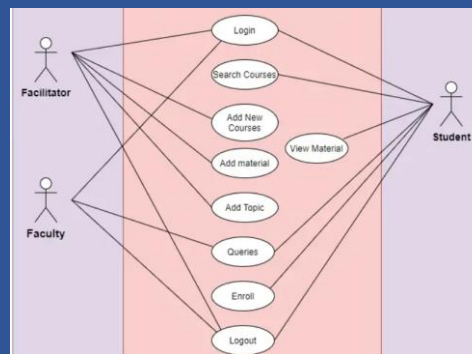
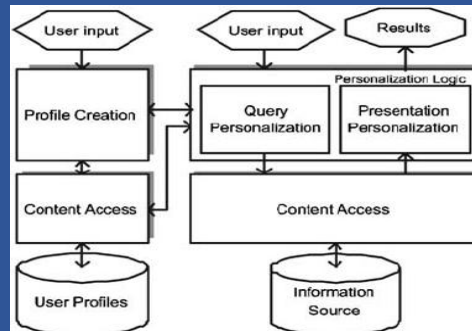
Problem Statement

Current online education systems often fail to provide personalized learning experiences, resulting in decreased engagement and retention. This study investigates the use of AI to tailor educational content in real-time, aiming to enhance individual learning experiences, boost student engagement, and improve overall educational outcomes through customized and effective learning solutions.

Objectives

We aim to create an AI-powered platform that personalizes learning by adapting content based on learner feedback and performance. The platform will provide real-time recommendations for additional resources and feature interactive, adaptive content to keep students engaged. A user-friendly interface will ensure seamless navigation, making the learning experience both effective and enjoyable.

System Design & Implementation



Results and Analysis

Tools used:

1. Programming Languages: Python, JavaScript ,PHP
2. Frameworks and Libraries: TensorFlow, React, Node.js
3. Databases: MySQL
4. Development Tools: Visual Studio Code, GitHub,XAMPP
5. Design Tools: Figma, Adobe XD

Expected Result



Applications & Conclusion

Applications

Personalize learning paths to enhance engagement, retention, and overall satisfaction. By analyzing individual performance and preferences, AI can create customized learning journeys that address each learner's unique needs, strengths, and areas for improvement. This approach fosters a more engaging and motivating learning environment, encouraging learners to stay committed and achieve their educational goals.

Conclusion

This project aims to revolutionize online learning by making it more engaging, personalized, and effective through AI-driven personalization. By tailoring educational content and experiences to individual needs, the project enhances learning outcomes, fosters greater engagement, and paves the way for a more inclusive and adaptive education system. With AI as a transformative tool, the future of education promises to be more responsive, equitable, and impactful for learners of all backgrounds.

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