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(57) Abstract :

The present invention discloses an AI-based framework (100) for predicting student learning behaviors using multi-source data and machine learning algorithms. The system comprises a data collection module (110), preprocessing unit (120), AI prediction engine (130), personalized recommendation system (140), and visualization dashboard (150). The invention provides real-time behavioral predictions, early detection of at-risk students, and personalized interventions. Experimental validation demonstrates significant improvements in prediction accuracy, learning outcomes, and student engagement. The invention enables educational institutions to enhance teaching strategies and optimize resource allocation effectively.

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