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(57) Abstract :

MACHINE LEARNING APPROACHES FOR ANALYZING STUDENTS AND TEACHERS' PERSPECTIVES IN HIGHER EDUCATION MATHEMATICS The present invention provides a machine learning-based analytical framework for systematically capturing, processing, and evaluating the perspectives of students and teachers in higher education mathematics. The system utilizes educational data mining, natural language processing, clustering, predictive modeling, and sentiment analysis to analyze structured, unstructured, and behavioral educational data. It identifies student learning gaps, assesses teaching effectiveness, and generates personalized learning pathways and adaptive instructional strategies. Insights are delivered via an intuitive dashboard for students, instructors, and institutional administrators, facilitating data-driven decision-making and improving mathematics education outcomes. The invention is scalable, automated, and suitable for deployment in universities, e-learning platforms, and educational policy-making organizations. FIG.1

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