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Master Thesis Defense

Entitled

“STUDENT BEHAVIOR ANALYSIS SYSTEM”

INTELLIGENT CLASSROOM DYNAMICS: REAL-TIME ASSESSMENT AND ENHANCEMENT OF STUDENT
ENGAGEMENT USING SOME OF THE AI TECHNIQUES

by

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Abstract

Real-time, comprehensive insight into students' attention and engagement within the classroom can provide valuable information on their interests in the covered class topics. This understanding holds the potential to significantly enhance student-centered educational experiences. A variety of sophisticated artificial intelligence (AI) applications are currently being utilized to analyze and understand student behavior in classroom settings. Several of these applications purport to be effective in assessing students' level of interest or disinterest in a given class or topic, based on their behavior. Such technologies rely on tracking and analyzing visual data related to students' body language. In this research proposal, we present a real-time evaluation system for students in educational settings, which aims to analyze their behavior in class. The system incorporates the examination of student behavior via web camera, subsequently translating this data into a graphical representation of students' level of attention. Utilizing these insights, the system is capable of furnishing pedagogical recommendations to instructors, facilitating optimal classroom management, and heightening student engagement as required. By improving both student outcomes and instructors' teaching capabilities, our system seeks to elevate the overall educational quality. Our research involves an exploration of body and facial recognition algorithms, in conjunction with their relevance to the analysis of student behaviors. This allows us to generate appropriate instructional recommendations based on the observed patterns. Convolutional Neural Network (CNN) and Recommendation system will be used in this study. The ultimate goal of our research is to develop a smart classroom environment that can motivate and raise students' attention, thus promoting enhanced learning experiences for all stakeholders. System overview is in Figure 1.

Keywords: Facial Recognition, Student Behavior, Convolutional Neural Network (CNN), Education, Smart Classroom, Behavior System, Recommendation system.

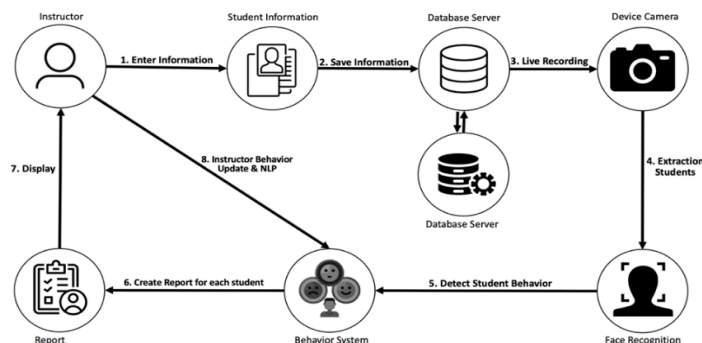


Figure 1: System Overview