

# Online Exam Proctoring System

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**Abstract:** *The popularity and coverage of various e-learning resources and different types of distance education has been increasing day by day. The capability to successfully monitor online tests has become important for the evolution for the next stage of education. At present, manual proctoring has become the most frequently used form of evaluation, where the student/test-taker is required to go to a specific examination centre, or by proctoring tests using a webcam. Though, such techniques are not cost effective and difficult. In this project, we aim to develop a system that accomplishes the goal of automated online proctoring. The proposed system hardware comprises of a single webcam, and a mic., with the goal of tracking the audio and visual surroundings of the location of test. The model comprises of six components that always measure the behaviour of the user : user authentication, text detection, audio detection, and tab switching detection. By combining the continuous estimation components, and using a temporal sliding window, we design higher-level features to determine whether the test taker is cheating at any time during the test. To test our proposed system, we collect multimedia data (audio and visual) from the test taker performing various types of cheating while taking online tests. Extensive experimental results demonstrate the accuracy, robustness, and efficiency of our online proctoring system.*

**Keywords:** E-Learning, Proctoring, Accuracy, Efficiency, Robustness, Authentication

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