

## Abstract

Maintaining academic integrity during offline examinations requires effective supervision, particularly in large examination halls where continuous monitoring of every student is challenging. Although CCTV systems are widely available in educational institutions, they are primarily used for recording examination sessions rather than intelligent monitoring. The study proposes an AI-based examination invigilation framework that utilizes existing CCTV infrastructure to identify and monitor students during examinations. The framework integrates face recognition, multi-object tracking, and computer vision techniques to detect students, maintain their identities across video frames, and analyse behavioural patterns. Suspicious activities, including repeated head movements, communication between students, and the presence of unauthorized objects, are identified by analysing behavioural patterns over time instead of isolated observations. When irregular behaviour is detected, the system generates an incident report containing the student's identity, seating location, timestamp, detected activity, confidence score, and image evidence for invigilator verification. The framework assists invigilators by providing documented evidence for reviewing examination incidents while reducing the need for continuous manual observation. By utilizing existing surveillance infrastructure, the proposed approach offers a practical and scalable solution for AI-assisted examination monitoring in higher education.

**Keywords :** Artificial Intelligence, Computer Vision, Face Recognition, Multi-Object Tracking, Behaviour Analysis, Smart Invigilation.