

What is Contract Cheating?

The act of a student submitting academic work that was done by a third party as their own work is known as Contract Cheating. It is not always a commercial transaction and can involve sharing of work between students, family or friends.

Issues: Contract Cheating poses a major threat to the academic integrity and standards of higher education. Detecting and substantiating contract cheating is extremely tedious, complex and time-consuming. It is vital to deal with cases effectively, fairly and transparently. QAA recommends using the “balance of probabilities” as the standard of proof.

Research Questions: Can AI be used to

- I. aid the process of detecting and substantiating contract cheating?
- II. ensure that decisions are fair, transparent and consistent?
- III. predict contract cheating?

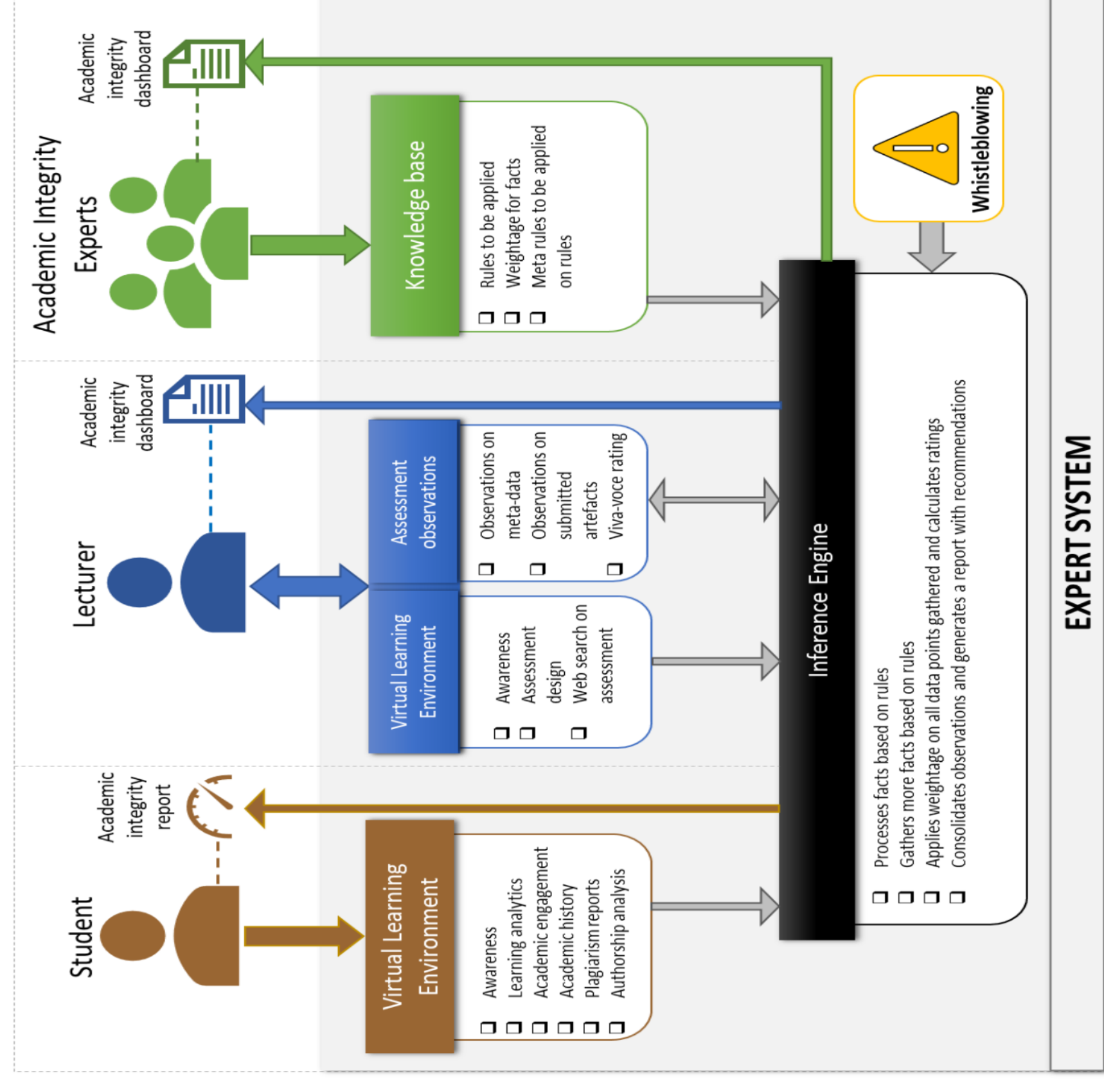


Figure 1

Solution

Develop a centralised system to aid the detection and substantiation of contract cheating. Enable academics to define evaluation criteria in a structured and easily maintainable **rule-based web application**. Detect and substantiate contract cheating by following below steps:

- Assign weightings to evaluation criteria (**figure 4**)
- Select yes or no to the provided questionnaire, based on the insights of student’s work and cues identified while marking (**figure 3**)
- The system then recommends whether the student needs to be invited by the marker for a viva-voce.
- Based on the viva results, a referral needs to be generated to Academic Integrity Officers (AIOs).
- **Finally, AIOs decide whether the student is suspicious by using the summary report and doing further investigation. (figure 2)**
- The complete case proceedings including the verdict are documented within the system.

Ideally, most (if not all) of the steps (workflow) need to be automated.

Add Factors

Add Student Record
Further Investigation
Student Summary
Add Weightage

Student ID:

Student's academic behaviour

Awareness scores

- Did the student attend a seminar, session, or training organised by the university to educate them about contract cheating?
- Was the student successful in passing an online or offline test on contract cheating awareness?
- Did the student participate in an academic integrity activity campaign or other similar events offered by the higher education institution?
- Has the student signed a self-declaration confirming that the student is committed to maintain academic integrity?

Learning analytics

What is the student's level of engagement in the virtual learning environment in terms of the overall interaction expected from the

Figure 3

Add Weightages

AWARENESS_SCORE_THRESHOLD

ASSESSMENT_DESIGN_RISK_THRESHOLD

DOCUMENT_SIMILARITY_SCORE_THRESHOLD

DOCUMENT_REFERENCE_SCORE_THRESHOLD

HIGH_PRIORITY_DOC_CONTENT_CUE_WEIGHTAGE

MEDIUM_PRIORITY_DOC_CONTENT_CUE_WEIGHTAGE

DOCUMENT_CONTENT_SCORE_THRESHOLD

HIGH_PRIORITY_META_DATA_CUE_WEIGHTAGE

Figure 4

Conclusion and Future Work

It is feasible to use AI to aid the process of detection and substantiation of contract cheating. However, more work is needed before utilizing the proposed system in practice. This involves the automation of workflow including the integration of student engagement data from VLE and Turnitin. Academics and AIOs need to be trained and persuaded to use such a system. A large dataset consisting of real contract cheating cases is needed for training machine learning models to predict contract cheating.

Figure 2