

Review Form 1.7

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| Journal Name: | Asian Journal of Research in Computer Science |
| Manuscript Number: | Ms_AJRCOS_113528 |
| Title of the Manuscript: | ExamAssessor Tool: An Automated System for Efficient Answer Sheet Evaluation |
| Type of the Article | Original Research Article |

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PART 1: Review Comments

| | Reviewer's comment | Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here) |
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| <p>Compulsory REVISION comments</p> <p>1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript)</p> <p>2. Is the title of the article suitable? (If not please suggest an alternative title)</p> <p>3. Is the abstract of the article comprehensive?</p> <p>4. Are subsections and structure of the manuscript appropriate?</p> <p>5. Do you think the manuscript is scientifically correct?</p> <p>6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</p> <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p> | <p>1. The manuscript presents a valuable contribution to automated grading systems, especially relevant in the context of increased online education. The interdisciplinary approach, integrating OCR, NLP, and ANN, provides a robust system for evaluation.</p> <p>2. The title is generally suitable, clearly reflecting the manuscript's focus on automated grading. However, it might benefit from specifying that the system is designed for subjective, textual answers.</p> <p>3. The abstract is comprehensive, providing a succinct overview of the study's purpose, methodology, results, and potential impact. It could benefit from a brief mention of the limitations and future work to set realistic expectations for readers.</p> <p>4. The structure is logical, progressing from introduction and literature review to methodology, system architecture, and results. However, it would benefit from a deeper dive into the discussion of the implications of the system's error rate.</p> <p>5. The manuscript is scientifically sound but requires additional details on the ANN's architecture, hyperparameter tuning, and a more thorough statistical analysis of the model's performance. It could be improved by a deeper exploration of bias and fairness in the grading model, especially in handling linguistic diversity.</p> <p>6. The references are current and relevant.</p> <p>additional suggestions/comments</p> <ul style="list-style-type: none">• An error rate of 16.85% might be acceptable in some contexts, but for educational purposes, this could be significant. It's unclear what types of errors are most common and how they could impact the grading outcome.• Besides accuracy and error rates, other metrics such as precision, recall, and F1-score could provide a more rounded view of performance. There's also a need for validation against a diverse set of answer sheets to test the model's robustness across different subjects and answer complexities. A confusion matrix could be helpful to understand the model's specific strengths and weaknesses.• While the accuracy of the system is reported, the paper would benefit from a more in-depth comparison between the automated system's grading and that of human educators. How does the system handle edge cases, and what is the level of agreement with human graders?• The paper does not discuss how bias is mitigated in the keyword-based grading system. For instance, how does it ensure that the presence of keywords correlates with the quality of content?• Looking at Figure 22 the system heavily relies on the presence of keywords for grading, which could miss the nuances of language and argumentation that do not rely solely on keywords.• There is no mention of user testing or feedback from educators and students who would be the end-users of such a system. | <p>1. Yes, we have tried an interdisciplinary approach to build a robust evaluation and assessment system.</p> <p>2. We have added details on the ANN's architecture, hyperparameter tuning, and a more thorough statistical analysis in section 4 - Training an Artificial Neural Network</p> <p>3. As mentioned in findings also error are generally there because of scanning and poor writing issues.</p> <p>4. Paper at first explores an error rate with diverse sheets from one institution however in our next work we will try to include other metrics as well as subjects from diverse science and arts domain.</p> <p>5. Model designed is based on ANN which has an efficient learning system as number of use cases increases exceptions and edge cases will be efficiently handled.</p> <p>6. Next phase of work also plans to include importance of sequences while answering a particular question which should satisfy the requirement of handling not only the keywords.</p> <p>7. Model designed will on test with parallel to human assessor, to verify and correct discrepancy existing.</p> |
| <p>Minor REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p> | <p>The language quality is generally good, suitable for scholarly communication.</p> | |

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| Optional/General comments | Please review the numbered equations throughout the text. It is noted that some equations, such as Equation (ii) in Section 4.1, are numbered but not referred to within the document. Standard academic practice recommends numbering only those equations that are subsequently cited or discussed. If an equation is not referenced, it should be presented without a number to maintain a clean and professional format. | Yes and same has been corrected in modified version of the paper being submitted. |
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PART 2:

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| | Reviewer's comment | Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here) |
| Are there ethical issues in this manuscript? | (If yes, Kindly please write down the ethical issues here in details) | |