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| Journal Name: | [**Journal of Advances in Mathematics and Computer Science**](https://journaljamcs.com/index.php/JAMCS) |
| Manuscript Number: | **Ms\_JAMCS\_139406** |
| Title of the Manuscript: | **PROPOSAL OF A CONVOLUTIONAL NEURAL NETWORK-BASED PREDICTION MODEL FOR PROSTATE CANCER FROM MRI** |
| Type of the Article | **Original Research Article** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This manuscript tackles a significant challenge in the realm of medical imaging and cancer identification by introducing a CNN-based model aimed at the early detection of prostate cancer through MRI data. With the rising incidence of prostate cancer and the complications tied to its manual diagnosis, this research aids in enhancing both diagnostic precision and efficiency. The use of deep learning in radiological applications remains a pertinent and swiftly advancing domain, and this study reinforces its significance with supporting empirical findings. The model achieved an impressive 92.68% accuracy, indicating its promising potential for integration into clinical workflows and decision support systems. | We sincerely thank you for your encouraging and insightful comment. We are pleased that the scientific and clinical relevance of our approach has been acknowledged. The main objective of our work is precisely to demonstrate, through solid empirical results, the feasibility and relevance of integrating AI particularly CNNs into the clinical workflow. Your remarks further strengthen our conviction regarding the added value of this contribution for the medical and scientific community. |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | A CNN-Based Predictive Model for Prostate Cancer Detection from MRI Scans | Thank you for the proposed title. We will take it into consideration, along with the suggested topic. |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | The evaluation of the model was conducted using a dataset of MRI images obtained from two different sources, resulting in an accuracy rate of 92.68% and demonstrating robust performance in both sensitivity and specificity metrics. This study underscores the potential of AI in radiological practices and lays the groundwork for future clinical adoption. | We thank you for this positive feedback. The evaluation on data from two distinct sources was specifically intended to test the robustness of the model across varied contexts, while remaining representative of real clinical cases. We are pleased that you recognize the potential of our approach for future integration into clinical practice. We will continue to explore this direction in future work, particularly through broader clinical validations. |
| Is the manuscript scientifically, correct? Please write here. | The manuscript is fundamentally sound from a scientific perspective, particularly regarding its concepts and execution. Nevertheless, several issues need to be resolved: Certain mathematical notations are formatted inconsistently or are not sufficiently clarified. While evaluation methods (such as precision and recall) are mentioned, they do not include actual numerical findings. Details about the dataset size and preprocessing techniques are insufficient, which might lead to concerns about reproducibility. The description of the CNN model architecture and the training process is well done, but incorporating a comparative baseline model (like a traditional ML approach or a pretrained CNN) would enhance the scientific contribution. | We thank you for this thorough and highly relevant evaluation. We have addressed all the comments raised:   * Mathematical notations: We have standardized all the notations used throughout the manuscript and reformulated certain expressions to improve clarity. Each symbol or formula is now explained within the text. * Numerical results of the metrics: A summary table has been added to the "Results" section, containing the values of accuracy (92.68%), recall, specificity, F1-score, and AUC. This allows for a comprehensive quantitative assessment of the model's performance. * Dataset size and preprocessing: We have expanded the corresponding section with detailed information regarding the number of MRI images used, the distribution between training and test sets, and the preprocessing steps applied (normalization, resizing, data augmentation, etc.). These additions aim to ensure the reproducibility of the study. * Comparison model: We trained a Support Vector Machine (SVM) model on the same dataset using manually extracted features. The results were compared with those of the proposed CNN model. This comparison is now included in the manuscript (in the "Performance Comparison" section) and confirms the superiority of the CNN model in this context. |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | The citations are mostly suitable and consist of a combination of seminal and contemporary studies. Nevertheless, the following aspects should be taken into account: Incorporate additional recent, peer-reviewed sources from the last three years pertaining to CNNs in prostate cancer research. Think about adding articles from esteemed journals such as IEEE Transactions on Medical Imaging, Nature Medicine, or Radiology: AI. | We thank the reviewer for this valuable suggestion. We have updated the bibliography by incorporating several recent articles (2015–2024) published in high-impact journals such as IEEE Transactions on Medical Imaging, Nature Medicine, and Radiology: AI.  These references strengthen the scientific framework of our study and highlight recent developments in the application of CNNs for prostate cancer detection. This update significantly enhances the relevance and timeliness of our literature review. |
| Is the language/English quality of the article suitable for scholarly communications? | The English language is mostly clear, but:  Some sentences are awkwardly constructed or poorly translated (for instance, “supervised apprenticeship” should be changed to “supervised learning”).  The grammar, punctuation, and technical language require improvement throughout the document.  It would be beneficial to have a thorough proofread by a native English speaker or a professional editing service.  No ethical concerns were found in the manuscript. However, it is important to clearly specify the source of patient data, including whether ethical approval or patient consent was secured for the use of MRI images. | We sincerely thank the reviewer for the constructive and detailed comments.   * Linguistic quality: The manuscript has been reviewed and edited by a native English-speaking expert in scientific writing. Awkward sentences have been rephrased, and grammar, punctuation, and technical vocabulary have been improved to ensure a smooth reading experience in line with the standards of international journals. * Ethical considerations: We have added an "Ethical Statement" section in the manuscript, clearly stating that the MRI images used were obtained from publicly available anonymized databases, accessible for research purposes without requiring specific consent. This addition is intended to ensure transparency and compliance with current ethical guidelines. |
| Optional/General comments | Fix any formatting and language errors.  Enhance the data and methodology description.  Add statistical baselines or comparison models.  Add more evaluation metrics and ethical declarations. | We thank the reviewer for these valuable recommendations.   * Formatting and language: A comprehensive revision of the manuscript was carried out to correct formatting issues (headings, figure captions, tables, equations) as well as language errors. The current version complies with editorial standards and ensures clear and professional readability. * Data description and methodology: The corresponding section has been enriched with additional details regarding the nature and origin of the data, the preprocessing steps applied, and the full training and evaluation process of the model. These clarifications improve both understanding and reproducibility. * Statistical basis and comparison models: A reference model (SVM) has been included for comparison, along with a statistical analysis of the performance results. These additions help better contextualize the outcomes and strengthen scientific rigor. * Evaluation metrics and ethical statement: The manuscript now includes multiple evaluation metrics (accuracy, recall, specificity, F1-score, AUC), which are detailed in the Results section. A clear ethical statement has also been added, specifying the source of the MRI data and compliance with regulatory requirements. |

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| **PART 2:** | | |
|  | Reviewer’s comment | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Are there ethical issues in this manuscript?** | Although most people can understand English,  A few of the sentences are badly translated or clumsily written (for example, "supervised apprenticeship" should be "supervised learning").  Throughout the book, the use of technical words, language, and punctuation needs to be improved.  Think about hiring a professional editing agency or having a native English speaker proofread your work thoroughly.  There were no ethical problems found in the paper. The source of patient data, including whether ethics permission or patient agreement was acquired for the use of MRI scans, should be clearly stated. | We thank the reviewer for their relevant observations:   * Linguistic quality: We have conducted a thorough review and comprehensive correction of the manuscript, addressing awkward phrasing, improving technical terminology, and refining punctuation. This revision was carried out by a native English speaker specialized in scientific writing, ensuring linguistic quality in line with international standards. * Ethical considerations: We have added a dedicated section specifying that the MRI images used come from publicly available anonymized databases, accessible for research purposes, and that all ethical conditions related to their use have been adhered to, in compliance with current regulations. |