

Review Form 3

Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	Ms_JAMCS_124851
Title of the Manuscript:	A Survey of Machine Learning Techniques for Accurate Seizure Detection and Future Forecasting
Type of the Article	Accepted

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p>	<p>This manuscript offers a valuable overview of machine learning for epilepsy management. It highlights the potential benefits and challenges of these techniques, discussing areas like accuracy, generalizability, and clinical translation. The authors' focus on emerging trends like multimodal data fusion and federated learning is commendable. However, a more in-depth discussion of ethical implications is needed to ensure responsible development and deployment of these systems.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>Yes, the title "A Survey of Machine Learning Techniques for Accurate Seizure Detection and Future Forecasting" is suitable.</p>	
<p>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.</p>	<p>Yes, the abstract is comprehensive. It effectively summarizes the key points of the article, including the scope of the survey, the challenges in seizure detection and forecasting, the potential of machine learning techniques, and the need for further research.</p> <p>However, here are a few minor points that could be considered for improvement:</p> <p>Specificity: The abstract could be made slightly more specific by mentioning some of the machine learning techniques that were surveyed, such as convolutional neural networks and recurrent neural networks.</p> <p>Clinical Impact: It might be helpful to briefly highlight the potential clinical benefits of accurate seizure detection and forecasting, such as improved patient outcomes and quality of life.</p> <p>Overall, the abstract is well-written and provides a clear and concise overview of the article.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>Yes, the subsections and structure of the manuscript appear to be appropriate for a comprehensive review of machine learning techniques for seizure detection and forecasting. The structure of the manuscript is well-organized, with clear headings and subheadings that break down the content into logical sections.</p> <p>The manuscript includes the following sections:</p> <p>Abstract: Provides a brief overview of the survey's purpose and scope.</p> <p>Introduction: Introduces the topic of epilepsy, its impact, and the importance of accurate seizure detection and forecasting.</p> <p>EEG Recording Techniques: Discusses the basics of EEG recording, including electrode placement and signal characteristics.</p> <p>Seizure Manifestations in Scalp EEG: Describes the different types of seizures and their corresponding EEG patterns.</p> <p>Challenges in Automated Scalp EEG-Based Seizure Detection: Discusses the challenges in developing effective seizure detection systems, including data complexity, seizure definition, and data collection and labeling discrepancies.</p> <p>Domain-Specific Knowledge in EEG-Based Seizure Detection: Provides an overview of EEG recording techniques, EEG frequency bands, and seizure manifestations in scalp EEG.</p> <p>Datasets: Lists and describes various EEG datasets used in seizure detection research.</p> <p>Modern Techniques for Epileptic Diagnosis: Discusses the use of machine learning and deep learning in epileptic diagnosis, including the stages of epileptic diagnosis using deep learning.</p> <p>Machine Learning Algorithms for Classification: Presents various machine learning algorithms used for seizure detection, including k-Nearest Neighbors, Support Vector Machine, Random Forest, and others.</p>	

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	<p>Deep Learning Algorithms for Classification: Discusses deep learning algorithms used for seizure detection, including Convolutional Neural Networks, Recurrent Neural Networks, and Graph Neural Networks.</p> <p>Discussion and Future Work: Summarizes the key findings, challenges, and future directions in seizure detection research.</p> <p>Conclusion: Concludes the survey by highlighting the importance of machine learning techniques in seizure detection and forecasting.</p> <p>Overall, the manuscript's structure and organization are appropriate for a comprehensive survey of machine learning techniques for seizure detection and forecasting.</p>	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p>This manuscript presents a comprehensive survey of machine learning techniques for accurate seizure detection and forecasting, demonstrating a thorough understanding of the complexities involved in analyzing electroencephalogram (EEG) data. The authors provide a detailed analysis of various approaches, including traditional machine learning models, deep learning architectures, and hybrid methods, highlighting their strengths and limitations. The inclusion of a wide range of datasets, performance metrics, and validation methods adds to the scientific robustness of the manuscript. The authors also discuss the challenges and future directions in the field, such as the need for larger, more diverse datasets, personalized models, and interpretable AI. Overall, the manuscript is scientifically robust and technically sound, providing a valuable resource for researchers and clinicians in the field of epilepsy management.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p>	<p>The references provided in the document are extensive and cover a wide range of topics related to machine learning techniques for seizure detection and forecasting. The references are also recent, with most of them published between 2019 and 2024.</p>	
<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>Yes, the language and English quality are suitable for scholarly communications.</p>	
<p>Optional/General comments</p>	<p>Some general comments on the article:</p> <p>Clear purpose and scope: The article clearly states its purpose and scope, providing a comprehensive review of machine learning techniques for automated seizure detection and prediction from EEG data.</p> <p>Well-structured: The article is well-organized, with a logical flow of ideas and a clear introduction, body, and conclusion.</p> <p>Technical accuracy: The article appears to be technically accurate, with the author demonstrating a good understanding of the topic and relevant terminology.</p> <p>Use of keywords: The article includes relevant keywords, which will help with indexing and discoverability in academic databases.</p>	

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PART 2:

	Reviewer's comment	Author's comment <i>(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)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

Reviewer Details:

Name:	A. Kalaivani
Department, University & Country	Nallamuthu Gounder Mahalingam College, India