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Journal Name:	**Journal of Engineering Research and Reports**
Manuscript Number:	**Ms_JERR_129972**
Title of the Manuscript:	**Scalable Anomaly Detection with Machine Learning: Techniques for Managing High-Dimensional Data Streams.**
Type of the Article	**Original Article**

PART 1: Comments

	Reviewer's comment	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. 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.	The manuscript is valuable to the scientific community, addressing critical challenges in modern data analytics. It highlights the importance of machine learning techniques such as autoencoders, Isolation Forests, PCA, and RNNs for tackling real-time anomaly detection in high-dimensional data. The study caters to diverse applications across industries like finance, healthcare, and cybersecurity by providing a comprehensive toolkit, ensuring broad relevance. Also, the paper emphasizes key issues, including scalability, data quality, model interpretability, and privacy, offering insights into emerging solutions like Explainable AI and incremental learning. These discussions bridge theoretical advancements with practical applications, fostering innovation. In addition, real-world examples, such as fraud detection and healthcare monitoring, strengthen the manuscript's practical value. Its focus on distributed and edge computing demonstrates scalable methods for managing the growing complexity of IoT and decentralized systems, enhancing decision-making capabilities in data-driven operations. I believe this work is a vital resource for researchers and practitioners, blending theoretical insights with actionable solutions to address pressing challenges in anomaly detection and big data analytics.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	The title of the article, "Scalable Anomaly Detection with Machine Learning: Techniques for Managing High-Dimensional Data Streams," is appropriate and effectively captures the essence of the content. It clearly communicates the primary focus on scalable anomaly detection using machine learning while specifying the relevance to high-dimensional data streams. The title aligns well with the article's detailed exploration of methods like autoencoders, Isolation Forests, and PCA, as well as the discussion on distributed and edge computing. Additionally, it appeals to the target audience of researchers and professionals in data science and machine learning. A slight refinement to emphasize the real-time application focus could enhance its impact, such as rephrasing to ***"Scalable Anomaly Detection with Machine Learning: Real-Time Techniques for High-Dimensional Data Streams."*** This would highlight a key aspect of the paper while maintaining clarity and relevance.	

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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 abstract of the article is comprehensive and effectively outlines the key focus areas, including scalable anomaly detection techniques, their application to high-dimensional data streams, and their relevance across various industries. It mentions specific machine learning techniques such as autoencoders, Isolation Forests, PCA, and RNNs, as well as emerging challenges like data quality, privacy, and model explainability. However, there are areas where it could be improved for clarity and impact: Suggestions for Improvement: • the work provides a new perspective on combining these techniques or proposes innovative applications, this should be stated clearly. • Incorporate Practical Insights: While the abstract mentions real-world examples, it could briefly detail one or two significant findings or impacts, such as reducing fraud detection errors or improving efficiency through specific methods. • Streamline Length:The abstract is slightly verbose in discussing broad concepts. Reducing repetitive phrases and focusing on the main contributions would make it more concise and impactful. • Address Real-Time Focus:Since real-time anomaly detection is a recurring theme in the article, the abstract should emphasize this aspect more prominently.	
Is the manuscript scientifically, correct? Please write here.	The manuscript appears scientifically accurate, as it discusses well-established techniques such as autoencoders, Isolation Forests, PCA, and RNNs for anomaly detection, aligning with current research in machine learning. It comprehensively covers the challenges of high-dimensional data, scalability, and real-time processing, and offers solutions like Explainable AI, incremental learning, and edge computing. The inclusion of real-world examples strengthens its claims and highlights its practical relevance. However, verifying that credible and recent references support all methods and claims is essential. Additionally, any specific improvements, such as reduced fraud detection errors, should be backed by quantitative evidence. While the manuscript demonstrates scientific rigor, a detailed peer review is necessary to confirm the validity of its technical details, experimental results, and referenced works.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	The manuscript's references are relevant, addressing key topics such as anomaly detection methods, scalability techniques, and applications in fraud detection and healthcare. However, references dated earlier than 2004 are not current and may not reflect the latest advancements in these areas. While some recent references from 2021 and 2023 are included, the manuscript would benefit from a stronger focus on studies published within the last five years, particularly in emerging areas like Explainable AI and real-time processing. Updating the references to prioritize more recent and relevant studies would enhance the manuscript's scientific relevance and credibility.	

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Is the language/English quality of the article suitable for scholarly communications?	The language quality of the manuscript is generally suitable for scholarly communication. The writing is clear, technically accurate, and effectively conveys complex concepts in machine learning and anomaly detection. The use of terminology aligns with the expectations of an academic audience, and the structure supports the logical flow of ideas.	
Optional/General comments	The manuscript addresses a relevant and timely topic but has areas that could be improved for greater clarity and impact. While it provides a comprehensive overview of existing techniques. Highlighting unique methodologies or insights would enhance its academic value. The balance between theory and practical application could be improved by including quantitative results, detailed case studies, or experimental benchmarks to demonstrate real-world applicability. Additionally, the manuscript would benefit from a comparative analysis of the discussed techniques, assessing metrics such as accuracy, scalability, and computational efficiency. Some references are outdated, with publications older than 2004 included. Updating these with more recent studies, particularly in areas like Explainable AI and real-time processing, would improve relevance. Certain technical concepts, such as incremental learning and edge computing, require clearer and more detailed explanations, potentially supported by diagrams to improve accessibility. While the language is generally suitable for scholarly communication, some sections are verbose. Streamlining the writing for conciseness and clarity would enhance readability. The challenges discussed, such as data quality and privacy, could also be explored more deeply with more actionable solutions. Finally, the abstract and conclusion could be strengthened to highlight better the paper's key findings, practical contributions, and implications for future research. These improvements would significantly enhance the manuscript's scholarly value and impact. The manuscript requires minor revisions to improve clarity and relevance. The contributions should be explicitly highlighted to distinguish this work from existing studies. Updating older references with recent publications, particularly in areas like Explainable AI and real-time processing, will enhance its relevance. Technical explanations, such as edge computing and incremental learning, need more clarity and detail. The language can be streamlined to improve readability and conciseness. Additionally, the abstract and conclusion should better emphasize the paper's key findings and practical implications. Addressing these points will significantly strengthen the manuscript's clarity, focus, and impact	

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	The manuscript addresses a relevant topic and provides a comprehensive overview of machine learning techniques for anomaly detection across various applications. However, several improvements are needed. The paper should be explicitly outlined to enhance its academic value. While theoretical discussions are detailed, the lack of practical implementation examples, quantitative results, or comparative analysis limits its real-world relevance. Updating older references (pre-2004) with recent studies, especially in areas like Explainable AI, would improve its relevance. Technical explanations, such as those for edge computing and incremental learning, require further clarity, and the language could be streamlined for conciseness. Additionally, the abstract and conclusion should highlight the paper's key findings and implications. The manuscript's clarity, relevance, and impact would be significantly improved by addressing these issues.	

PART 2:

	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)*	

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