

Review Form 3

Journal Name:	Journal of Engineering Research and Reports
Manuscript Number:	Ms_JERR_129979
Title of the Manuscript:	Data Augmentation Techniques Using Generative Adversarial Networks: Employing GANs to create synthetic data for enhancing machine learning model training.
Type of the Article	Research paper

PART 1: 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>
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 provides a significant contribution to the field of data augmentation by introducing 12 advanced techniques leveraging GANs. It addresses real-world challenges such as data imbalance, scarcity, and privacy, making it highly relevant for applications in healthcare, autonomous vehicles, and entertainment. Additionally, the discussion on future trends and challenges, such as integration with diffusion models and ethical considerations, highlights its forward-thinking approach and potential to inspire further research.	
Is the title of the article suitable? (If not please suggest an alternative title)	Yes, the current title accurately reflects the content of the manuscript. However, a more focused title could be: <i>"Advanced GAN-Based Data Augmentation Techniques: Applications, Challenges, and Future Directions."</i>	
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 provides a clear overview of the manuscript's goals, contributions, and key findings. However, it could benefit from more emphasis on the novelty of the proposed techniques and their distinct advantages over existing methods. Consider adding a sentence about the lack of experimental results and the need for future validation.	
Is the manuscript scientifically, correct? Please write here.	Yes, the manuscript is scientifically sound, but the lack of experimental validation weakens its claims. Adding experimental results or comparisons with existing methods would strengthen the scientific rigor.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	The references are generally sufficient and include foundational and recent works. However, including more recent papers on GAN-based augmentation (e.g., works from 2022–2023) would enhance the manuscript's relevance. Suggested additions: <ul style="list-style-type: none"> Huang, Shihua, Cheng He, and Ran Cheng. "SoloGAN: multi-domain multimodal unpaired image-to-image translation via a single generative adversarial network." <i>IEEE Transactions on Artificial Intelligence</i> 3.5 (2022): 722-737. Singh, Shreyansh, et al. "Metgan: Memory efficient tabular gan for high cardinality categorical datasets." <i>Neural Information Processing: 28th International Conference, ICONIP 2021, Sanur, Bali, Indonesia, December 8–12, 2021, Proceedings, Part VI</i> 28. Springer International Publishing, 2021. 	
Is the language/English quality of the article suitable for scholarly communications?	The language is clear and scholarly but has minor issues with grammar, subject-verb agreement, and sentence structure. Examples include: <ul style="list-style-type: none"> Original: "GAN improve systems..." Correction: "GANs improve systems..." 	
Optional/General comments	<ul style="list-style-type: none"> Consider providing more methodological details to help readers reproduce the techniques. Expand the section on ethical concerns and propose actionable solutions for misuse risks like deepfakes. 	

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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:

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