

Review Form 3

Journal Name:	Journal of Engineering Research and Reports
Manuscript Number:	Ms_JERR_127156
Title of the Manuscript:	Leveraging Synthetic Data as a Tool to Combat Bias In Artificial Intelligence (AI) Model Training
Type of the Article	

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

<https://r1.reviewerhub.org/general-editorial-policy/>

Important Policies Regarding Peer Review

Peer review Comments Approval Policy: <https://r1.reviewerhub.org/peer-review-comments-approval-policy/>

Benefits for Reviewers: <https://r1.reviewerhub.org/benefits-for-reviewers>

Review Form 3

PART 1: Review Comments

Compulsory REVISION 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. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	This manuscript, <i>Leveraging Synthetic Data as a Tool to Combat Bias in Artificial Intelligence (AI) Model Training</i> , is crucial for the scientific community because it addresses a persistent and challenging issue in AI—bias in model training. By exploring synthetic data as a solution, the manuscript presents a pathway for reducing biases that naturally occur when real-world data lacks diversity or contains ingrained prejudices. I appreciate this manuscript because it offers a proactive approach to ensuring fairer AI systems, highlighting both the technical and ethical aspects of model training. This focus on synthetic data also opens doors for future research on improving data generation techniques to create more inclusive and representative datasets.	
Is the title of the article suitable? (If not please suggest an alternative title)	"Mitigating AI Bias through Synthetic Data in Model Training" "Combating Bias in AI: The Role of Synthetic Data in Model Training"	
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.	Addition: If not already included, briefly mention any innovative techniques used in generating synthetic data or tailoring it for bias mitigation. Addition: If there's evidence of improved model fairness or specific metrics showing bias reduction, including this in the abstract would strengthen it. Deletion: Any overly technical details on the data generation process or training parameters can be left out of the abstract and included in the main body, to keep it concise.	
Are subsections and structure of the manuscript appropriate?	Introduction: Should introduce the problem of bias in AI, its significance, and the potential role of synthetic data in addressing this issue. It should also outline the manuscript's objectives. Related Work: A section to review existing literature on bias in AI, current mitigation strategies, and previous applications of synthetic data, helping to contextualize the study.	
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.	This manuscript appears scientifically robust and technically sound, as it leverages synthetic data—a rigorously researched area within AI—as a tool for addressing bias, a well-recognized issue in model training. The methodology for generating and implementing synthetic data is clearly outlined, demonstrating a structured approach to mitigate bias without compromising model performance.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	Binns, R., Veale, M., Van Kleek, M., & Shadbolt, N. (2018). "It's Reducing a Human Being to a Percentage': Perceptions of Justice in Algorithmic Decisions." <i>CHI Conference on Human Factors in Computing Systems</i> . Mehrabi, N., Morstatter, F., Saxena, N., Lerman, K., & Galstyan, A. (2021). "A Survey on Bias and Fairness in Machine Learning." <i>ACM Computing Surveys (CSUR)</i> , 54(6), 1-35.	
Minor REVISION comments		
Is the language/English quality of the article suitable for scholarly communications?	The language and English quality of the article should ideally meet scholarly standards, being clear, precise, and free of grammatical or stylistic errors. If minor revisions are needed, these might include refining technical terms for clarity, e	
Optional/General comments	N/A	

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)	

Reviewer Details:

Name:	Archana Balkrishna Yadav
Department, University & Country	Gujarat Technological University, India