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REVIEWER'S REPORT

Manuscript No.: 52123 Date: 10-06-2025

Title:

"QUESTION-ANSWER SYSTEM ON MEDICAL DOMAIN WITH LLMS USING VARIOUS FINE-TUNING METHODS"

Recommendation:
Accept as it is …… **Yes** ……
Accept after minor revision……
Accept after major revision ……
Do not accept (*Reasons below*) ……

Rating	Excel.	Good	Fair	Poor
Originality			Yes	
Techn. Quality		Yes		
Clarity		Yes		
Significance			Yes	

Reviewer Name: Gulnawaz Gani

Reviewer's Comment for Publication.

This paper investigates and demonstrates the application of parameter-efficient fine-tuning methods and RLHF to adapt open-source LLMs for medical question-answering on resource-constrained systems.

Detailed Reviewer's Report

- This paper explores fine-tuning open-source LLMs using PEFT techniques (QLoRA, LoRA) and RLHF for a medical domain-specific QA system, aiming for deployment on resource-limited hardware.
- While demonstrating the feasibility of adapting smaller LLMs and the benefits of Chain-of-Thought prompting, the reported accuracy scores (e.g., 45% for Mistral_7B_QLora_ft_MedMCQA_20K) suggest that the models, even with fine-tuning, still fall short of the precision required for critical medical applications.
- Further improvements in contextual understanding and factual correctness are essential for real-world clinical utility, especially given the "silver standard" accuracy of 48%.
- The research provides valuable insights into making LLMs more accessible and specialized for medical contexts.