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B. Tech CSE (ARTIFICIAL INTELLIGENCE)

LITERATURE REVIEW SUBMISSION

1. **Group No: 48**
2. **Guide Name: Simi.S**
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4. **Problem Definition (minimum 5 line):**

Proposal Title:

Explainable, User-Centric Clinical AI Platform for Personalized and Actionable Elderly Care

Problem Statement:

As AI-driven health prediction tools proliferate, their opacity and technical complexity impede practical adoption by clinicians and caregivers, particularly in eldercare contexts. There is an unmet need for clinical AI systems that not only provide transparent and interpretable outputs but also support actionable insights, personalized recommendations, and seamless communication between technical models, healthcare professionals, caretakers, and patients.

5. **Literature survey Summary Table (Minimum 15 papers)**

Sl No	Author(s) & Proceedings	Year	Journal/ Impact Factor	Citations	Dataset Used	Methodology/ Approach	Limitations & Future works	Ref patent(if product based project)
	Literature Survey Link							

6. **Identified Research Gaps:**

- Most research focuses on developing a high performance model for the task but fails to produce an interpretable system, even most works mention their system to be a black-box and need a inference module for clinical impact in their future works
- An end-to-end health monitoring system—built around a unified theme and fully integrated with advanced large language models (LLMs)—for multiple users such as doctors, patients, and caretakers has not yet been fully developed.
- Most XAI applications stop at producing inference on the output but never provide further actionable insights into the conditions of the patients

- Most existing approaches generate outputs in a stateless manner and fail to incorporate memory, meaning they do not store or utilize a patient's historical data to inform further prognosis or clinical decision-making.

7. Novelty / Contribution of the Proposed Work

- Integration of advanced explainable AI (XAI) mechanisms to deliver interpretable model outputs, automated anomaly detection, and visual explanations tailored for clinical users.
- Creation of an intuitive, dual-level software interface that offers detailed technical interpretations for healthcare professionals and user-friendly summaries for caregivers and patients, enhancing the accessibility and utility of predictions.
- Deployment of conversational agentic tools capable of translating complex technical findings into easily understood explanations and providing stepwise guidance for health improvement, fostering proactive management of elderly wellbeing.

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