A Comprehensive Survey on Requirements and Design of AI-Powered Clinical Intelligence Systems in Healthcare

Vaibhav Kusalkar, Sarvesh Biwalkar, Atharv Bhujbal, Tushar Bansod, Rohini Jadhav
Department of Computer Engineering
Smt. Kashibai Navale College of Engineering, Pune, India
vaibhavkusalkar24@gmail.com, sarveshbiwalkar@gmail.com, atharvkbhujbal@gmail.com,
tusharbansod.skn.comp@gmail.com, rohini.jadhav_skncoe@sinhgad.edu

Abstract: *With the increasing complexity of healthcare services, artificial intelligence (AI) is emerging as a vital tool to support medical practitioners by providing real-time clinical insights, automating routine documentation, and enhancing patient engagement. This survey investigates the design requirements, technical challenges, and ethical considerations for AI-powered clinical intelligence systems intended for healthcare environments. Our study is based on a survey conducted with healthcare professionals, patients, and AI researchers, capturing diverse perspectives on functionality, usability, data privacy, and ethical concerns. This paper synthesizes these insights into a detailed requirement analysis that can guide the development of clinically effective, ethically sound, and user-centric AI systems. Through this analysis, we aim to lay the groundwork for creating AIdriven tools that improve clinical workflows, foster better patient outcomes, and support healthcare professionals in delivering quality care.*

Keywords: AI in healthcare, clinical intelligence, large language models, survey, requirement analysis, healthcare assistance.

Copyright to IJARSCT
www.ijarsct.co.in

DOI: 10.48175/IJARSCT-22339

ISSN
2581-9429
IJARSCT

276