AI-Driven Innovations in Advanced Medical Diagnosis: Enhancing Precision and Patient Care through Intelligent Systems

Shubham Bhor, Aditya Nimkar, Jay Patil, Suraj Pawase, Prof. Sanjeev Shukla
Sandip University, Nashik, India

Abstract*: This paper delves into the development and application of an advanced medical diagnosis system, powered by artificial intelligence (AI) and data-driven methodologies, designed to enhance the precision, efficiency, and accessibility of healthcare delivery. By integrating state-of-the-art machine learning algorithms, predictive analytics, and real-time monitoring technologies, the system addresses critical gaps in traditional diagnostic practices.*

The proposed system leverages big data from diverse sources, including electronic health records (EHRs), wearable devices, and laboratory reports, to create a holistic view of patient health. Advanced data preprocessing techniques and feature engineering ensure the reliability and accuracy of predictions. The system not only aids in early disease detection and risk assessment but also offers personalized treatment recommendations, fostering improved patient outcomes.

This research emphasizes the multidisciplinary approach required to build such a system, combining AI, medical expertise, and robust data security measures. Case studies demonstrating the system's effectiveness in predicting chronic diseases and enabling timely medical interventions are discussed.

Furthermore, this paper explores challenges such as data privacy, algorithmic bias, and integration complexities, while outlining potential solutions. The findings underscore the transformative potential of AI-driven medical diagnosis systems in modern healthcare, paving the way for future innovations and a more patient-centric approach to healthcare delivery.

Copyright to IJARSCT
www.ijarsct.co.in

DOI: 10.48175/568

ISSN
2581-9429
IJARSCT

473