

HealthSphere: Integrated AI-Powered and Blockchain Based Health Management and Support System

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Abstract: *The healthcare sector is undergoing a significant transformation as it embraces advanced technologies to address some of the most pressing challenges related to accessibility, data security, and operational efficiency. Among these innovations, Artificial Intelligence (AI) and Blockchain technology have emerged as key enablers of enhanced healthcare delivery. AI-powered chatbots are being increasingly utilized to provide immediate, real-time assistance to patients, helping them assess symptoms, obtain basic medical advice, and access information without the need for in-person consultations. These chatbots, powered by Natural Language Processing (NLP) and Machine Learning (ML) algorithms, can efficiently handle a wide range of patient inquiries, improving accessibility and reducing the burden on healthcare providers.*

On the other hand, Blockchain technology is revolutionizing the way health records are managed. It offers a decentralized, secure, and transparent method of storing and sharing health data, ensuring data integrity, and empowering patients with control over their own medical information. By enabling smart contracts and secure data transactions, Blockchain ensures that health records are easily shared among authorized entities, reducing the risks of unauthorized access and data breaches.

This paper provides an in-depth survey of the integration of these technologies into a unified healthcare management system. It explores the practical applications of AI chatbots in improving patient engagement, symptom management, and appointment scheduling, while also discussing how Blockchain can enhance the security, transparency, and interoperability of health records. The paper further addresses the challenges that come with implementing these technologies, including issues related to scalability, data privacy, and regulatory compliance. Finally, it proposes a scalable, secure, and user-friendly platform that combines the strengths of both AI chatbots and Blockchain to create an efficient and reliable healthcare system, poised to improve the overall delivery of healthcare services..

Keywords: AI Chatbots, Blockchain, Healthcare Management, Data Security, Patient Assistance, Smart Contracts, Data Privacy, Patient Engagement