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**BIOMEDICALANDHEALTHINFORMATICS**

# HI Special Issue on “Advancing Healthcare Informatics with Large Language Models”

Large language models (LLMs) are a trendy term for those working in content writing, query-based response, and language translation. The ChatGPT, which has over 100 million users after launching on 30 November 2022, is based on LLM. The LLMs work on the probabilities of the occurrence of words or sequences of words from a corpus by training and learning with trillions of words and a billion parameters. Due to its inherent technologies and working principles to generate human-like text and understanding of context, it has the immense potential to transform healthcare practices, patient interactions, generation of different medical reports, and for a better understanding of unstructured Electronic Health Records (EHR).

However, the evolving landscape of healthcare informatics, enriched by the integration of Large Language Models (LLMs), presents many challenges and questions that researchers and practitioners must address to fully harness the potential of this transformative technology. For example, the field faces unprecedented challenges, from ethical and regulatory concerns surrounding LLM applications in healthcare to developing secure data management systems in the blockchain era. As LLMs find their place in augmented reality environments, surgical procedures, and tele-health consultations, questions about training, privacy, and real-world implementation arise. Moreover, to ensure personalized care, adopting AI-driven biomarker discovery and smart wearables necessitates careful consideration of data security and interpretation of complex data of patients. By exploring these multifaceted issues, we aim to pave the way for responsible and impactful LLM applications in healthcare that truly revolutionize the industry. Therefore, the following key challenges will be explored:

Topics of interest include, but are not limited to, the following:

* Enhancing Clinical Decision Support: LLM Analysis of Electronic Health Records
* The Role of LLMs in Tackling Global Health Crises and Pandemics
* Medical Chatbots and Virtual Assistants: Ensuring Clinical Accuracy with LLMs.
* Beyond Language: Multimodal LLMs for Image, Text, and Speech Analysis in Healthcare
* IoT and LLM Convergence for Real-Time Patient Monitoring and Treatment
* Computer Vision-Powered LLMs for Medical Image Diagnosis
* Sentiment Analysis in Healthcare: Leveraging LLMs for Insights
* Predictive Models for Disease Diagnosis: LLMs in Personalized Healthcare
* Unlocking Personalized Medicine: Genomic Data Analysis with LLMs
* Data Privacy and Security in LLM-Driven Healthcare
* LLMs for Medical Report Generation and Interpretability
* The Healthcare Metaverse: Exploring LLM-Powered Virtual Worlds for Medical Education and Telehealth
* Augmented Reality and LLMs: Transforming Surgical Procedures and Medical Training
* Human-AI Collaboration: Empowering Healthcare Providers with LLMs
* Smart Wearables and LLMs: Personalized Health Monitoring and Analysis
* Blockchain Integration for Secure LLM-Based Healthcare Data Management

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# KeyDates

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