IS ARTIFICIAL INTELLIGENCE A BOON OR BANE? -A CONCEPTUAL STUDY IN HEALTHCARE

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Abstract
Technological innovation advancement is making life simpler. Many advance technologies like Artificial intelligence, Internet things, Robotics, Data Analytics, Big Data, Data mining are automating routine activities of healthcare workers to increase healthcare efficacy. Artificial Intelligence is a game changer, which is transforming the world playing a predominant role in healthcare. AI helps in transforming traditional healthcare system to virtually distributed care. AI is implemented as a tool in healthcare to improve healthcare outcome and improved quality services, but it has limitations like breaching of personal information, replacing many jobs, legal obligations. Hence there is need to implement AI with cautions for ethical usage, or else it may lead into health disaster. Only few of the healthcare hospitals like corporate, super speciality hospitals invested in Artificial intelligence for gaining competitive advantage over other competitors. All varied healthcare includes Ayurveda Unani, Homeopathic hospitals yet to implement Artificial intelligence. This Paper attempts to know whether the adoption of AI is really an advantage to hospital or not. Paper is descriptive in nature to know the benefits and threats of AI and is based on secondary data like Articles, Website, E-books many more. The paper aims to study is to know the conceptual framework of Artificial intelligence in healthcare. Study explores the opportunities and challenges of Artificial intelligence in healthcare and sheds light to identify preventive measures in adopting artificial intelligence in healthcare.
Keywords Artificial intelligence, Healthcare, Healthcare professionals

Introduction

Everything that civilization has to offer is a product of human intelligence; we cannot predict what we might achieve when this intelligence is magnified by the tools that AI may provide, but the eradication of war, disease, and poverty would be high on anyone's list. Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last." These words of Stephen Hawking, one of the greatest minds of the century emphasize that AI, as the foremost cutting-edge technology of this generation, can potentially accelerate the pace of innovation, enhance the productivity of a country and strengthen national competitiveness. (DeAngelis SF, 2019)

The extensive application of artificial intelligence (AI) in education, medical care, environmental protection, urban operations, judicial services, and other sectors will considerably increase the precision of public services. AI technologies are likely to be able to accurately sense, forecast, and provide early warning of major situations for infrastructure facilities and social security operations, as well as take desired actions, significantly increasing the capability and level of social governance and playing a key role in effectively maintaining social stability. Artificial intelligence (AI) is a machine that has a human-like touch and intelligence and can think like a human brain. Artificial intelligence (AI) refers to a machine's or system's ability to learn and use information in order to execute a variety of cognitive activities. This article examines the current state of AI in developing countries such as India, as well as some key findings that potentially lead to new AI paths and prospects in healthcare.

AI and related technologies are becoming more common in business and society, and they're making their way into healthcare. These technologies have the ability to convert traditional hospital-centric patient care into widely distributed patient care, as well as collaborative administrative processes with healthcare stakeholders. In important tasks including early disease prediction, diagnosis, and treatment prescription, AI can outperform humans. The study tries to look at both the positives and the drawbacks. In automating care services, AI is both a blessing and a burden, and it is also experiencing certain challenges to rapid application in healthcare.

Recently estimated that healthcare AI technologies will generate $8.6 billion in annual revenue by 2025. Current usage trends forecast a global revenue of $34 billion by the same deadline.

Artificial intelligence has continually reinvented and re-energized itself. Today's machine learning systems are capable of acting, learning, comprehending, and anticipating. This is a step advance from the previously AI-driven surgery-

assist robots and genetic code connecting. Artificial intelligence's growth in healthcare is loaded with risks and stumbling blocks. Errors in AI systems, for example, can be danger to patients. Similarly, exploiting a patient's data for AI research compromises the privacy of the patient.

This article discusses the main advantages of AI, as well as the challenges and risks that such advantages imply. Let's begin with the advantages.

Literature review

The review of literature was conducted using various academic databases, such as Google scholar, JSTOR and Science direct. The search terms used include "artificial intelligence", "advantages of AI", Healthcare and "Challenges of AI". Articles published between 2010 and 2023 were included in the review. The selected literature was analysed to identify the potential benefits and implications of AI in Healthcare practices. The analysis was based on a thematic approach, which involved identifying and categorizing the keywords and concepts discussed in the literature. Additionally, case studies were used to provide real-world examples of the use of AI in Healthcare practice.

Research methodology

The study is descriptive in nature with secondary information from renowned Article, books Interviews and Newsletters.

AI-as boon

Artificial Intelligence (AI) has emerged as a boon in hospitals, offering numerous advantages and opportunities to enhance patient care, improve operational efficiency, and streamline healthcare processes. Here are some key ways in which AI is benefiting hospitals:

Efficient and Accurate Diagnoses: AI-powered diagnostic tools and algorithms can analyze medical data, including patient records, laboratory results, and medical images, to aid in accurate and timely diagnoses. AI can identify patterns and anomalies that may be missed by human clinicians, leading to improved diagnostic accuracy and faster decision-making.

Predictive Analytics and Early Intervention: AI algorithms can analyze patient data to identify early warning signs of diseases or complications. This enables healthcare professionals to intervene early, preventing the progression of diseases and reducing healthcare costs. AI can also predict patient outcomes, helping hospitals allocate resources effectively and prioritize high-risk patients.

Personalized Treatment Planning: AI can analyze vast amounts of patient data, including medical history, genetic information, and treatment responses, to develop personalized treatment plans. By considering individual patient characteristics and factors, AI helps healthcare providers deliver targeted interventions and optimize treatment outcomes.

Workflow Optimization and Automation: AI technologies can automate administrative tasks, such as appointment scheduling, medical coding, and billing, reducing the burden on hospital staff. This allows healthcare professionals to allocate more time to direct patient care, enhancing overall efficiency and productivity.

Medical Image Analysis: AI algorithms can analyse medical images, such as X-rays, CT scans, and MRIs, to aid in accurate interpretation and detection of abnormalities. AI-powered image analysis systems can help radiologists and other healthcare professionals detect diseases, tumors, or other conditions more efficiently and with higher accuracy.

Patient Monitoring and Remote Care: AI-enabled monitoring systems can continuously collect and analyze patient data, alerting healthcare providers to any changes or potential risks. This enables remote patient monitoring and telemedicine, allowing hospitals to extend care beyond their physical premises and provide healthcare services to remote or underserved areas.

Clinical Decision Support: AI-based clinical decision support systems provide healthcare professionals with evidence-based recommendations and treatment guidelines. These systems can help reduce errors, improve patient safety, and support healthcare providers in making well-informed decisions.

Research and Data Analysis: AI can accelerate medical research by analyzing large datasets, scientific literature, and clinical trial data. AI algorithms can identify patterns, potential drug interactions, and treatment options, aiding researchers in discovering new therapies and advancing medical knowledge.

While AI offers significant advantages in hospitals, it is important to address challenges related to data privacy, ethical considerations, and human oversight. Implementing AI technologies with careful planning, transparent algorithms, and proper governance frameworks is crucial to ensure patient safety, maintain privacy, and uphold ethical standards in healthcare settings. By harnessing the power of AI, hospitals can improve patient outcomes, enhance operational efficiency, and deliver higher-quality care.

AI- as curse.

While Artificial Intelligence (AI) has several potential benefits in healthcare, there are also concerns and challenges that could categorize AI as

a curse in hospitals. Here are some points to consider:

Reliance on Technology over Human Judgment: AI systems, though powerful in analyzing data and providing insights, lack the human touch and intuitive judgment that healthcare professionals possess. Over-reliance on AI in hospitals could lead to a reduced emphasis on human expertise, clinical judgment, and personalized patient care. It is crucial to strike a balance between AI-driven insights and human decision-making.

Privacy and Security Risks: AI systems require access to vast amounts of patient data to deliver accurate results. However, the storage, processing, and sharing of sensitive patient information raise concerns about privacy and security. If not properly safeguarded, AI systems can become targets for data breaches or unauthorized access, leading to compromised patient confidentiality and potential misuse of personal health information.

Bias and Discrimination: AI algorithms are trained using historical data, which may contain biases and reflect existing disparities in healthcare. If these biases are not addressed, AI systems can perpetuate inequalities and discrimination in patient care. For example, if the training data predominantly represents a specific demographic group, the AI system may provide inaccurate or biased recommendations for other populations, resulting in inequitable treatment.

Legal and Ethical Challenges: The use of AI in healthcare raises legal and ethical considerations. Determining liability in case of AI errors or malfunctions becomes complex, especially when decisions are made autonomously. Additionally, ethical questions arise regarding informed consent, transparency of algorithms, and the impact of AI on patient-doctor relationships. Clear guidelines and regulations are needed to address these challenges and ensure responsible AI implementation in hospitals.

Workforce Displacement and Skill Gap: The introduction of AI systems in hospitals can lead to concerns about job displacement for healthcare professionals. Tasks that were traditionally performed by humans may be automated, potentially leading to workforce reductions or a need for reskilling. Healthcare organizations must proactively address these challenges by providing training and support to healthcare professionals to adapt to the changing landscape.

Lack of Emotional Intelligence: AI systems lack emotional intelligence and empathy, which are crucial aspects of patient care. Human interaction and emotional support play a vital role in patient well-being and recovery. Overreliance on AI systems may result in a loss of the human connection between patients and healthcare providers, leading to a negative impact on patient satisfaction and overall healthcare experience.

Technical Limitations and Errors: AI systems are not infallible and can make errors. The accuracy and reliability of AI algorithms heavily depend on the quality and representativeness of the data they are trained on. Inaccurate or flawed AI outputs can potentially harm patients and compromise the effectiveness of healthcare services.

To mitigate these challenges, hospitals need to implement robust governance frameworks, ensure transparency in AI algorithms, address biases in training data, prioritize patient privacy and security, and maintain a balance between AI-driven insights and human judgment. Responsible and ethical implementation of AI technologies in hospitals is crucial to avoid the potential negative consequences and ensure that patient care remains at the forefront of healthcare delivery.

Measurements to curb the barrier

Increasing public awareness

The correct use of AI, as well as its reach to the entire population, can be done by raising public knowledge about its value and the ways in which it can be useful. Using proper robust firewall to protect the system from being hacked Hacking into a system and obtaining access to it can be dangerous. To preserve the system's security, suitable firewalls and high-tech cyber security should be built.

Cost-cutting

Once invested on AI and can used to collaborate and speed up the work.AI can use to treat a greater number of patients and can reduce readmission and recovery time of patient.

As we addressed above, AI can work around the clock, creating more value in the same day as a human worker. And since AI can help to take over manual and tedious tasks, it frees up workers for higher-skilled tasks. That, ultimately, creates more value for the end-user or consumer.

Alternate Backup system

The AI system's operation cannot be anticipated to remain constant throughout time. If the AI fails unexpectedly during an emergency, it could be disastrous consequences. To avoid such disastrous consequences, an alternate backup facility should always be accessible.

Conclusion and future scope

AI is a platform that has allowed us to expand our horizons, develop our skills, and broaden our thinking. Despite the fact that these flaws are impeding AI's use and productivity, the importance of AI is being recognised, and attempts are being

attempted to mitigate or eliminate such issues so that it can be used to its maximum potential. AI may not be a complete answer to the problem of infectious disease transmission, but it is a tool for an early warning system that can give health professionals a timely heads-up and potentially save thousands of lives if AI's disruptive ability is harnessed wisely.

While AI presents challenges in hospitals, proactive strategies can help mitigate the potential curse of AI. By embracing human-machine collaboration, strengthening privacy and security measures, addressing biases, establishing legal and ethical frameworks, investing in workforce development, prioritizing emotional intelligence, and continuously evaluating AI systems, hospitals can harness the benefits of AI while minimizing the associated risks. A responsible and comprehensive approach is crucial to successfully club the curse of AI in hospitals and ensure optimal patient care and outcomes.

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