Artificial Intelligence Empowering Healthcare

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Abstract: *Addressing artificial intelligence as an innovative technology making a rapid move towards dominating healthcare system for being able to operate deliberately, intelligently & dynamically. As this technology comparable to human cognitive skills. A brief information on its history, its development, applications in various fields useful to mankind and its empowerment in healthcare is a worth study to appreciate its usage. In this article we present the history of artificial intelligence, its classification along with its successful applications in the projects of medicine.*

Keywords: Artificial intelligence, Health care system, Medicine, cognitive skills.

I. INTRODUCTION

The word artificial intelligence coined by Mccarthy a computer scientist. artificial intelligence was developed by the pioneers Warren Mcculloch & Walter Pits In 1943 accomplishing AI first phase & Donald Hebb strengthened with Hebbian Learning In 1949. Later In 1950 Alan Turing Who Pioneered In Machine Learning In His Book " Computing Machinery and Intelligence" Turing Test described in it as ability to test machine in exhibiting intelligence as of human. later on its development continued by experts & researchers on its design suitable for many applications. Making a breakthrough by appeareing in corporate worldwide as assisted by artificial intelligence. The more interesting part of its growing applications in every field and is not limited to medicine. Artificial intelligence applications in pharmacy include pharmacokinetic studies, pharmaceutical formulation fabrication, predicting invivo reactions, drug development, optimum dosing. From the years of development in medicine by using Artificial Intelligencehas been tabulated in table No.1

Table: 1   Development of Artificial intelligence in Medicine

Year	Development of AI
1960	National library of medicine developed web based search engines(PubMed) &medical literature analysis &retrieval system.
1970	Initial clinical informatics databases &medical recoed system developed.
1971	At Rutgers University Research resource on computers in biomedicine developed.
1973	At Stanford University medical experimental with AI in medicine developed.
1976	First prototype created for glaucoma consultation using CASNET model.
1986	University of Massachusett's developed Dxplain a decision support system in diagnosis.
2015	Pharmabot-a chatbot for medical education to paediatrics &their parents developed.
2017	Mandy created computerized patient intake for primary care practice.

Types of Artificial Intelligence

I) Capability Based: they are of three sub-types.

1. Weak or narrow AI: can operate limited operations intelligently.

2. General AI: executes cognitive functions

3. Super AI: succesor of General AI capable of outperforming humans.

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DOI: 10.48175/568

ISSN
2581-9429
IJARSCT

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II) Function Based: they are of four sub-types.

1. Reactive machines: fundamental variety of AI machine concentrate on simple function.

2. Limited memory: retains data previous interactions for certain period of time.

3. Mind theory: under research AI for communicating & socializing humans.

4. Self-awareness AI: it is a next frontier AI which outsmarts humans intelligence yet to be developed.

Artificial Intelligence applications in healthcare

1. AI assistance in diagnosis: image based diagnosis in dermatology, profontal chest X-ray images, pathology, cardiology.

2. AI assistance in hospital pharmacy: maintaining medical records, treatment plan designing, health support & pharmaceutical services (collection, comparing data from social awareness algorithm).

3. AI assistance in gastroenterology: computer aided analysis used in colonoscopy.

4. AI assistance in new curative therapies: synthetic biology breakthroughs like CRISPR technology developed for gene editing & several personalized medicines.

AI assistance in community pharmacies: chatbots as interface for patient's communication with healthcare experts developed and successfully utilized in times of pandemic.

II. CONCLUSION

Here we discussed about the artificial intelligence history of development and emerging technology usage in and around as part of healthcare. Keeping in view owing to their complex task dealing capacity, provides ease & empowerment to healthcare professionals to tackle more & more challenges future head.

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