

ARTIFICIAL INTELLIGENCE IN HEALTHCARE

Navya Sai Asst.Professor Dept of computer science ,St.Joseph's First Grade college Mysore

Ayisha Arbin MJ ,BCA Student St.Joseph's First Grade college Mysore.

Ayisha Nihan MM,BCA Student St.Joseph's First Grade college Mysore.

ABSTRACT

Artificial intelligence is becoming increasingly useful for doctors, nurses, radiologists, researchers, pharmacists, emergency medical service, and many other healthcare professionals. This paper proposes the creation of a smart healthcare system using artificial intelligence as a means of efficiently solving challenges in the healthcare industry and as a tool for optimizing patient care plans. The proposed AI-assisted system shows that it can support a patient who is admitted to the hospital through emergency medical services, easily process the patient's data, and offer early detection of serious diseases. It can automatically recognize the complicated patterns which have been obtained from radiologists, can analyze complete human molecular data and genetics in the clinic, and can support doctors by producing AI-generated radiologist reports, clinical laboratory reports, and many other decision-support tools. The proposed architecture can easily handle diverse and complicated healthcare problems and can be used by any modern hospital to save time and money. This work also shows the recent development of AI applications in healthcare, which could be used in the proposed architecture.

INTRODUCTION

Artificial Intelligence is the manner of human intelligence procedures with the aid of machines. As we recognize human beings are the writer of machines and giving them the capacity of choices making. Also, machines and robots can not grow to be same like humans because we are having a totally complex frame structure. Here is a small introduction on artificial Intelligence in Healthcare that AI techniques have rent extensive waves throughout healthcare and we people accept as true with that human physicians will now not get replaced with the aid of machines within the future. AI can help doctors and medical companies supply extra correct diagnoses and remedy plans. Artificial intelligence has already arrived in healthcare. AI can assist physicians to make higher scientific selections or even update human judgment is certain useful regions of health care. Artificial intelligence is that technology that behaves like people.

LITRATURE SURVEY

1. Dilsizian SE Siegel EL: Artificial Intelligence in medicine and cardiac imaging.

Although advances in information technology in the past decade have come in quantum leaps in nearly every aspect of our lives, they seem to be coming at a slower pace in the field of medicine. However, the implementation of electronic health records (EHR) in hospitals is increasing rapidly, accelerated by the meaningful use initiatives associated with the centre for Medicare & Medicaid Services EHR Incentive Programs. The transition to electronic medical records and availability of patient data has been associated with increases in the volume and complexity of patient information, as well as an increase in medical alerts, with resulting

"alert fatigue" and increased expectations for rapid and accurate diagnosis and treatment. Unfortunately, these increased demands on health care providers create greater risk for diagnostic and therapeutic errors. In the near future, artificial intelligence (AI)/machine learning will likely assist physicians with differential diagnosis of disease, treatment options suggestions, and recommendations, and, in the case of medical imaging, with cues in image interpretation. Mining and advanced analysis of "big data" in health care provide the potential not only to perform "in silico" research but also to provide "real time" diagnostic and (potentially) therapeutic recommendations based on empirical data. "On demand" access to high-performance computing and large health care databases will support and sustain our ability to achieve personalized medicine. The IBM Jeopardy! Challenge, which pitted the best all-time human players against the Watson computer, captured the imagination of millions of people across the world and demonstrated the potential to apply AI approaches to a wide variety of subject matter, including medicine. The combination of AI, big data, and massively parallel computing offers the potential to create a revolutionary way of practicing evidence-based, personalized medicine.

b) Patel VL, Shortliffe EH, Stefanelli M: The coming of age of artificial intelligence in medicine

This paper is based on a panel discussion held at the Artificial Intelligence in Medicine Europe (AIME) conference in Amsterdam, The Netherlands, in July 2007. It had been more than 15 years since Edward Shortliffe gave a talk at AIME in which he characterized artificial intelligence (AI) in medicine as being in its "adolescence" (Shortliffe EH. The adolescence of AI in medicine: will the field come of age in the '90s? Artificial Intelligence in Medicine 1993; 5:93-106). In this article, the discussants reflect on medical AI research during the subsequent years and characterize the maturity and influence that has been achieved to date. Participants focus on their personal areas of expertise, ranging from clinical decision-making, reasoning under uncertainty, and knowledge representation to systems integration, translational bioinformatics, and cognitive issues in both the modeling of expertise and the creation of acceptable systems.

3.Graher ML Franklin N,Gordon R:Diagnostic error in internal medicine.

The goal of this study was to determine the relative contribution of system-related and cognitive components to diagnostic error and to develop a comprehensive working taxonomy. One hundred cases of diagnostic error involving internists were identified through autopsy discrepancies, quality assurance activities, and voluntary reports. Each case was evaluated to identify system-related and cognitive factors underlying error using record reviews and, if possible, provider interviews. Ninety cases involved injury, including 33 deaths. The underlying contributions to error fell into 3 natural categories: "no fault," system-related, and cognitive. Seven cases reflected no-fault errors alone. In the remaining 93 cases, we identified 548 different system-related or cognitive factors (5.9 per case). System-related factors contributed to the diagnostic error in 65% of the cases and cognitive factors in 74%. The most common system-related factors involved problems with policies and procedures, inefficient processes, teamwork, and communication. The most common cognitive problems involved faulty synthesis. Premature closure, i.e., the failure to continue considering reasonable alternatives after an initial diagnosis was reached, was the single most common cause. Other common causes included faulty context generation, misjudging the salience of findings, faulty perception, and errors arising from the use of heuristics. Faulty or inadequate knowledge was power.

EXISTING SYSTEM

It's miles manual .Statistics is maintained in styles of record. The data or documents are not cozy Because of some accidents they will get burn from time to time when any of the patient need his or her reports they need to return to clinic to gather it that desires plenty of time and their time could be wasted AI is gadget getting to know algorithms and software program to mimic human cognition in the analysis, preventative and comprehensive of complex medical and fitness care statistics.

. DISADVANTAGES

1. Everything is achieved manually

Billing is done manually ,accumulating data or records of patient or offering prescription, retaining the report of the patient. Those are time ingesting and no longer relaxed because of a few accident like fire. Fitness care employee truely don't have the time to be filling out bureaucracy whilst concurrently tending to a room full of patients neither can be completed properly and the effects are an awful lot to excessive.

2. Chances of Duplication of data

It takes place occasionally. If happens while single affected person is these multiple medical report. So we have to keep away from rushing in the course of the registration and ask patient to spell their names without a doubt. Duplication values: when to capabilities have the same set of values. Duplicate index: when the 2 functions are specific ,however they over on the identical variety.

PROPOSED SYSTEM

It permits healthcare specialists to scan pre-existing medicines and use them to redecorate medication in a manner that allows them to combat against specific diseases.

We accept as true with that AI has an critical function to play in heart care services of the future AI is helped in accomplishing super achievement therefore in robotic surgical operation robots can not do delicate Surgical procedures with the advancement in electronic generation. The Roberts still operated by using a doctor.AI is solutions utilized in medical imaging

Aid labor in depth mage scanning and case triage.AI era regularly reap a stage of accuracy equivalent humans while screening chest x-rays for symptoms of Tuberculosis.Scientific selection Making: the time and resource making is needed to diagnostic sufferers may be decrease via AI in some healthcare activities this allows clinical specialists to response quickly and keep extra alive.

ADVANTAGES

The automated system would increase the efficiency of the system. AI is a equipped technology it will maintain records. It analyses data faster than humans. It keeps the doctor up to date in clinical research by scanning through millions of pages in matters of second. They cannot duplicate any of the forms or any of the data of the patients. AI can help in reducing the errors that are in the clinical practice. AI can automate routine task. It can reduce the number of healthcare professionals needed to provide care.

SYSTEM DESIGN

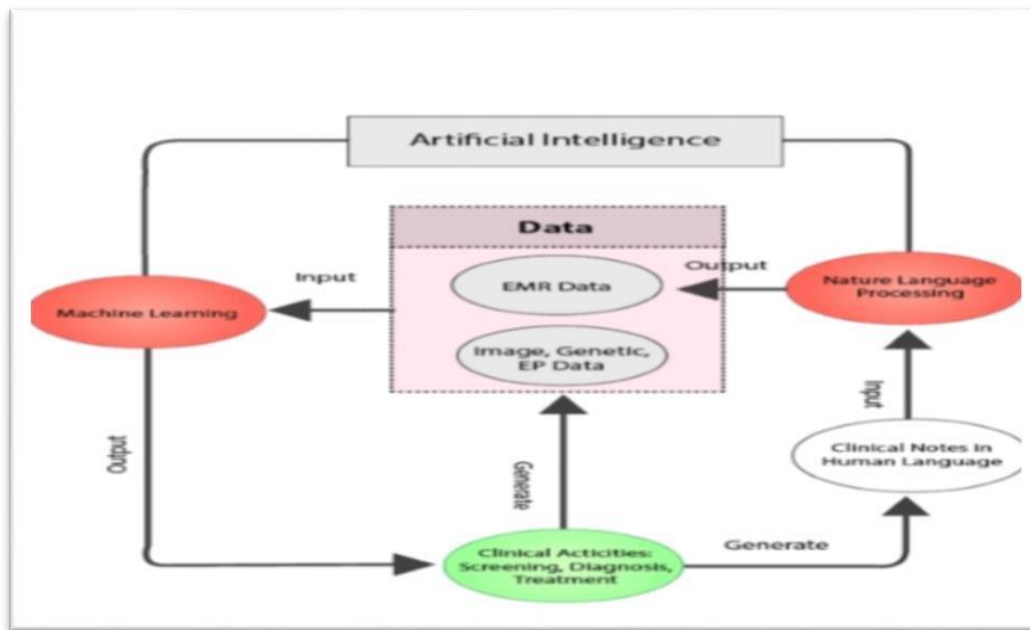


Fig1: System Architecture

CONCLUSION

As per the above information we have come to this conclusion that is there are advantages and also disadvantages in AI of healthcare. AI could be applied to the remote monitoring of patients like intelligent telehealth through wearables /sensors to identify. It offers multiple advantages over traditional analyses and other clinical decision making tools.

FUTURE ENHANCEMENT

Using this, many studies will be able to reach a large number of patients. They can screen compounds that are safe for humans, they can make it cheap and easy. It will access multiple data sources. In the future, this could translate into the creation of promotional policies. There are fewer disadvantages and more advantages.

REFERENCES

1. Murdoch TB, Detsky AS. The inevitable application of big data to health care. JAMA2013;309:1351-2.
2. Kolker E, Özdemir V, Kolker E. How Healthcare can refocus on its Super-Customers (Patients, n-1) and Customers (Doctors and Nurses) by Leveraging Lessons from Amazon, Uber, and Watson, OMICS2016;20:329-33.
3. Dilsizian SE, Siegel EL. Artificial intelligence in medicine and cardiac imaging: harnessing big data and advanced computing to provide personalized medical diagnosis and treatment. Curr Cardiol Rep2014;16:441.
4. Patel VL, Shortliffe EH, Stefanelli M, et al. The coming of age of artificial intelligence in medicine. Artif Intell Med2009;46:5-17.
5. Jha S, Topol EJ. Adapting to Artificial Intelligence: radiologists and pathologists as information specialists. JAMA2016;316:2353-4.
6. Pearson T. How to replicate Watson hardware and systems design for your own use in your basement. 2011 https://www.ibm.com/developerworks/community/blogs/InsideSystemStorage/entry/ibm_watson_how_to_build_your_own_watson_jr_in_your_basement??lang=en (accessed 1 Jun 2017).
7. Weingart SN, Wilson RM, Gibberd RW, et al. Epidemiology of medical error. BMJ2000;320:774-7.
8. Graber ML, Franklin N, Gordon R. Diagnostic error in internal medicine. Arch Intern Med2005;165:1493-9.