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ARTIFICIAL INTELLIGENCE (AI) APPLICATIONS IN M-HEALTH: A REVIEW PAPER

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Abstract

Mobile health (m-health) is the idea of health tracking using mobile phones and computing devices for patient monitoring, etc. In this new age, it has always been considered to be the biggest advance in technology. Artificial intelligence (AI) and big data analytics have recently been introduced in m-health to provide an efficient healthcare system. In modern medical science, different forms of data such as electronic health records (EHRs), medical photographs, and complicated text have been used, which are diversified, poorly interpreted, and extensively unorganised. This is an important explanation for the development of numerous unorganised and unstructured databases, along with healthcare systems, due to the proliferation of mobile apps. A comprehensive review of the implementation of AI and big data analytics to strengthen the m-health system is carried out in this paper.

Keywords: *Artificial Intelligence (AI), Big Data, Mobile Phones, Mobile-Health, Short Message Service (SMS).*

I. INTRODUCTION

Mobile health, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices, is defined as the process of combining mobile devices for medical and public health. Therefore, this strategy requires the introduction of one of the most essential advantages of mobile phones, called voice and short message service (SMS). There are currently over 500 m-health projects underway, and nearly 40,000 mobile medical-based applications are now available worldwide [1]. There are mobile medical devices specifically designed to regulate the heart rate, the level of glucose, blood pressure, the monitoring of the sleep cycle, and even the activity of the brain [2].

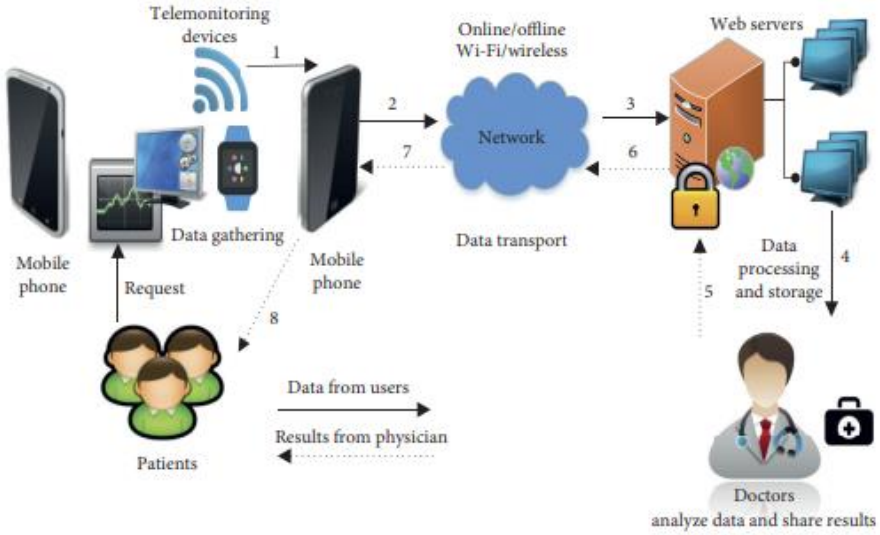

Fig. 1: Illustrates the Schematic representation of the mobile-health (m-health) scenario.

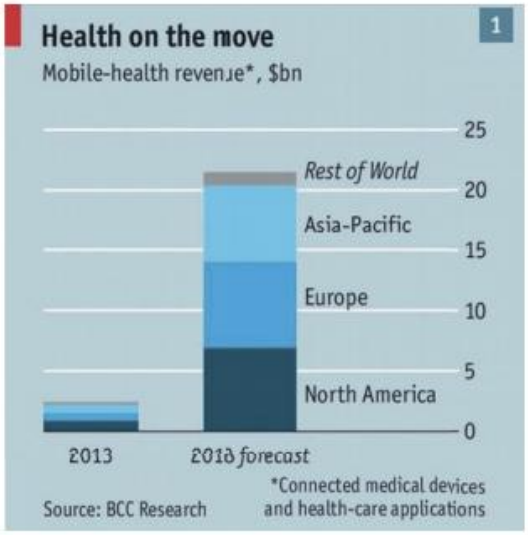

Fig. 2: Illustrates the global m-health markets.

Figure 1 illustrates the Schematic representation of the mobile-health (m-health) scenario Figure 2 illustrates the global m-health markets. Figure 3 illustrates the Smartphone-based m-health prototypical with artificial intelligence (AI) and big data analytics.

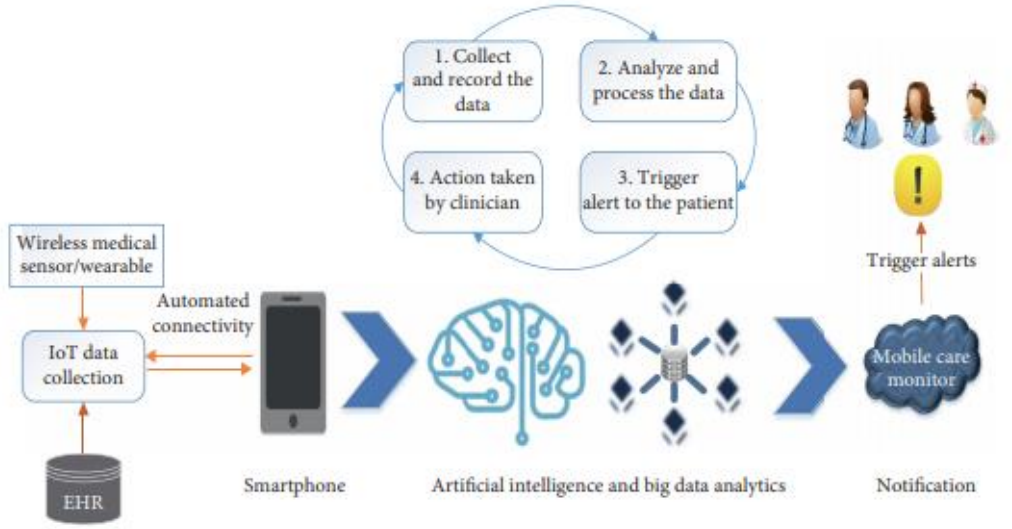

Fig. 3: Illustrates the Smartphone-based m-health prototypical with artificial intelligence (AI) and big data analytics**.**

Artificial intelligence is the process of demonstration of intelligence by machines in disparity to the natural intelligence depicted by the humans. Machine learning is one of the applications of AI that lay out the systems to create capability to learn automatically and to enhance it from its training without being programmed explicitly [3]. It also puts emphasis on the evolution of algorithms, can obtain data, and can adopt it for the process of making it to train themselves. Due to the fast enhancement of the AI, it has been employed in various fields, such as the IoT, machine vision, driver assistance, and natural language processing. AI has been put in application in various domains of healthcare which includes cancer research, cardiology, diabetes, mental health, identification of prognosis, and identification of Alzheimer's disease.

II. LITERATURE REVIEW

A survey on artificial intelligence applications for machine learning was performed by Lee et al. Machine learning is one of the most promising emerging Artificial Intelligence developments. Algorithms for learning that we use in many applications every day. One of the reasons why it works so well is that every time a web search engine such as Google or Bing is used to navigate the internet, a learning algorithm, one introduced by Google or Microsoft, has learned how to rank web pages. Any time Facebook is used, this is also machine learning and it acknowledges friends' images. Email spam filters keep the user, which is also a learning algorithm, from having to wade through loads of spam emails. This paper offers a brief overview and future insight of the vast applications of machine learning [4].

III. DISCUSSION AND CONCLUSION

Mobile health (m-Health) is a methodology used for health initiatives using mobile devices and technology and is the biggest technical breakthrough in recent research. Similarly, one of the important achievements of the intelligent healthcare system is the implementation of AI and the analytics of big data in healthcare. Centered on the implementation of AI and big data analytics, a thorough analysis of the m-healthcare framework is proposed in this paper. For the m-health viewpoint, different benefits from this combination are provided. In particular, all applications related to mobile health are explained in depth in the specific technical areas and building blocks, such as communications, sensors and computing. The role of different machine learning instruments within the current m-health model is also illustrated. Future research may be a thorough analysis of the retrospective validation and combination of AI models with different digital health tools and the assessment of their clinical validation and efficacy problems on these systems.

IV. REFERENCES

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