E-ISSN: 2706-8927
P-ISSN: 2706-8919
www.allstudyjournal.com
IJAAS 2020; 2(2): 164-166
Received: 30-01-2020
Accepted: 29-02-2020

Dr. Jaya Singh
PG Scholar, Department of Kaya Chikitsa and Panchkarma, Govt. PG Ayurvedic College & hospital, Varanasi, Uttar Pradesh, India.

Dr. Shweta Mishra
Assistant professor, Department of Kaya Chikitsa and Panchkarma, Govt. PG Ayurvedic College & hospital, Varanasi, Uttar Pradesh, India.

Dr. Nirmal Kumar
Associate Professor, Department Kaya Chikitsa, Shri Krishna Ayurvedic Medical College, Varanasi, Uttar Pradesh, India.

Corresponding Author:
Dr. Jaya Singh
PG Scholar, Department of Kaya Chikitsa and Panchkarma, Govt PG Ayurvedic College & hospital, Varanasi, Uttar Pradesh, India.

Ayurveda with artificial Intelligence: The 2.0 version

Dr. Jaya Singh, Dr. Shweta Mishra and Dr. Nirmal Kumar

Abstract
Upgrading yourself is the only way of staying ahead. To upgrade is to make improvement in something or exchange it for better version. There may be up gradation of skills, knowledge or system. Ayurveda is a science of life with a holistic approach to health and personalised medicine. It is one of the oldest medical systems, which comprises thousands of medical concepts and hypothesis. Ayurveda has ability to treat many chronic diseases such as Cancer, Diabetes, Arthritis and Asthma. So for upgrading this ancient and precious system of medicine there must be full-fledged inclusion of technology that allows computers and machines to function in an intelligent manner. This computer or machine based intelligence is called as Artificial intelligence. It is the simulation of human intelligence processes by machines, especially computer systems.
We all know that technology has great potential in reducing overloads from human shoulders, storage capability, saving costs and lots more. But its functionality in Ayurveda, for some people, might be indigestive. That's because Ayurveda regarded as something primitive and obsolete in compare to AI (Artificial Intelligence), which came in to the view a few years back and is regarded as revolutionary and futuristic. By adopting and adapting this digital world in the field of Ayurveda we can create a revolutionary change.

Keywords: Ayurveda, Artificial intelligence, Diabetes, Arthritis, Asthma, Cancer

Introduction
In the scenario of globalisation, the challenge was to develop Ayurveda to compete in the international market. Earlier, global brands came from the west. Today, the world is looking at the emerging markets in India and the fact that India is the second largest consumer market in the world. Now a day's people abroad are well aware of the harmful effect of chemicals used in medicine as well as beauty products. Ayurveda which is our ancient cultural and creative system of medicine has become popular all over the world because of its cost effective therapy and has least side effect. However it is necessary to keep abreast of international standards of quality, and selling in the global market and competing with leading brands. So for the globalisation of Ayurveda and to compete it in the international market it has combined with Artificial Intelligence. Thus Ayurveda with Artificial intelligence has become gift to the world.

Aims and objective
Study the application and significance of artificial intelligence in the globalisation of Ayurveda.

Materials and method
Source of information was taken from web browser and few papers related in this context.

What is artificial intelligence
In computer science artificial intelligence, sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to natural intelligence displayed by humans and animals.

History of AI
It has greatly evolved into a science of problem-solving with huge applications in business, health care, and engineering. One of the pivotal applications of AI is the development of the expert system. The year 1956 is usually considered to be the year when AI was born, as it was in 1956 that Dartmouth College had organized the famous conference. However, the preceding year, that is, 1955, saw its first AI system that was called Logic Theorist and the

people who developed it was Allen Newell, Herbert A. Simon. Nearly, 40 theorems of *Principia Mathematica* by Alfred N. Whitehead and Bertrand Russell were proved using this system. However, the designers of the system could not get it published.

In an interview with the BBC, theoretical physicist, Professor Stephen Hawking, had said that human efforts to create machines that can think are a huge threat to the existence of human race and that the race to develop a complete AI could mean that the human race would come to an end in the future. This warning was given by Professor Hawking after he was asked about revamping the technology that is used by him to communicate. The technology used by him involves AI of a basic nature. However, the warning of Professor Stephen Hawking has not been taken seriously by the world. Throughout the world, innumerable researches are being carried out on AI. A large amount of money is being invested to create a system that can function far more efficiently and at a much less time than a normal human being. Be it an educational institute, a manufacturing firm, a government office, or a research organization; AI finds its application in every field.

Importance of AI in Ayurveda

Technology Developes at a demand of the science for the benefit of end user. Technology adoption in the field of Ayurveda are taking place in various form-

- Knowledge
- Tele conference
- e-CME
- e- lecturing
- RDBMS
- Problem solution
- Instrumentation for Ayurvedic diagnosis
- Nadi (dosha-pulse) analyzer
- Remote (robotic) surgery
- Research
- Drug pathway analysis
- Absorption /target/ action of medicine
- Namburi spot test

  Disease based objective parametric evaluation

Before implementation of Artificial intelligence in Ayurveda, standardisation of Ayurvedic diagnostic, procedural and therapeutic aspects should be done.

Various researches has been conducted till date for Ayurveda based disease diagnosis using machine learning.

Nadi Pariksha/Pulse Diagnosis is a non- invasive ancient technique of Ayurvedic disease diagnosis through pulse. It accurately diagnoses physical, mental and emotional imbalances as well. It is also the scientific tool that enables a person to secure their personalized wellness regimes such as therapeutic massages, personalized diet, and detoxification. The time tested and age-old natural way of healing, Ayurveda, has taught that any presence of disease in our system will be indicated as an imbalance in our 'Doshas' - Vata, Pitta and Kapha. The principles of Ayurveda follow the natural way to diagnose diseases and bring back balance to the body, and one such mode of diagnosis is ‘Nadi Pariksha’.

One research has proposed model using Artificial Neural Networks and Decision Trees to create a tool that can take the VPK pulse readings using optical sensors so as to detect the Prakriti (VPK) of the patient. This covers the Sparshana phase of the three-fold Ayurvedic Diagnosis. Questionnaires have been formulated for the two diseases considered, Anemia and Hyperacidity, respectively. These question-naires are used as substitutes to the Darshana and Prashna phases.

The paper by Begum and Divaakar proposes the use of pressure sensors to detect pulse. As the pressure of the sensor over the pulse increases, the amplitude of the pulse signal first increases, reaching a maximum, and then decreases. After a particular threshold value, the pulse dies. A comparative study of implementation of various techniques for pulse sensing are discussed such Microphone as a sensor, Pressure as a sensor, Bi-Sensing Pulse Diagnosis Instrument in the paper by Chauhan. Roopini *et al.* proposed a device for Nadi Pariksha. It uses eighth order Butterworth filter for preprocessing of the three signals using optical pulse sensors so that the noise is eliminated. Three pulse sensors are used for the three signals to be visualized. The pulse data is then further classified into vata, pitta, and Kapha using artificial neural networks. Khair and Joshi proposed a method for detecting the pre-meal and post- meal difference in a person using pulse. Results to their experiment showed that pulse signal carries useful information for classification of pre-meal and post-meal signal. Pre-meal classification had an accuracy of 88.88%, while post-meal showed an 81.48% accuracy. Kulkarni and Kumbhar developed a non-invasive diagnosis tool for detection of diabetes using two techniques, i.e tridosha analysis and application of artificial neural networks.

Jiva Ayurveda had launched first-of-its-kind diagnostic protocols in the year 2018 for Ayurveda with the aim to create a definite structure for this ancient healing tradition and turn it into globally accepted medical science called A unique, the newly developed protocols are the result of a huge data analytics project that was initiated by Jiva Ayurveda six years ago. Using Big Data analytics and machine-learning techniques, the 5,000-year-old knowledge of Ayurveda and personalized treatment records of lakhs of patients at Jiva have been consolidated to offer the most advanced decision-support system for Ayurveda doctors. This tool is intended towards making root-cause based diagnosis in a structured, standardized and data-driven manner while allowing for the personalization of treatment.

Another application of AI in the field of Ayurveda is data mining. Data mining is a computational process of discovering patterns in large data sets involving methods at the intersection of artificial intelligence, machine learning, statistics and database systems. The term data mining appeared around 1990 in the database community. Currently, data mining and knowledge discovery are used interchangeably. To achieve valuable information, in context of Data Mining, it follows three major steps i.e. data collection, data shrink and valuable data quest. There are various approaches adopted by variety of researchers. Such approach involves, association analysis, Extrapolative modelling database fragmentation and divergence detection. From the eve of 1970’s the GOI has made enormous attempts to standardize Ayurveda by formulating numerous qualifications for Ayurveda practitioners and necessitated accreditation policies to institutions across states. Some of the initiatives are, Indian Medical Central Council Act-framed in 1970, Central Council of Indian Medicine (CCIM) under the Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)

established in 1971, Ministry of Health and Family Welfare-framed to monitor higher education in Ayurveda and Central Council for Research in Ayurvedic Sciences (CCRAS) designed to pursue research in Ayurveda. This information base is accessible through Decision Support System (DSS), data mining tool and digitized searchable texts. The data-mining tool enables precise knowledge searches using Boolean operators. Information related to diseases, causative factors, symptoms, treatment guidelines, drugs, dietary recipes, lifestyle changes and treatment procedures can be searched through complex queries employing any number of combinations of search strings.

'NIWARANA' an artificial intelligence based system for traditional medicine has developed in the country of Shrilanka. NIWARANA is an artificial Intelligence based system for traditional medicine. Nowadays people tend to use technology to solve their issues which come up every day. Unlike western medical field, it's very hard to locate Ayurveda doctors as they are rare find and there lot of fake doctors. Especially non Ayurveda doctors are not standardized. It has become growing social affair these days and we believe that our system will solve that above mention problem for certain content. NIWARANA will allow users to access information of best Ayurveda doctors who have specialized in certain medical areas. It further enables access to a chat bot which helps users to interact with it and find relevant doctors according the injury or disease that user is already suffering. NIWARANA uses a sentiment analyzer to recognize comments added by the users to evaluate doctors. Sentiment analyzer will provide a score according to the positivity or negativity of text in comments of users. Moreover it will rank doctors with the use of that score.

Conclusion

Ayurveda is the system of medicine that originated in India. But now, this medical system has been combined with Artificial intelligence. This combination has made Ayurveda more hi-tech, detailed, credible and more globalized in recent past. Since Ayurvedic system of medicine is cost effective with least side- effect, in Ayurveda e-commerce AI can be used to expand the market by significantly improving user experiences. It can also be leveraged to improve economic applications that have a significant impact on cost reduction, revenue growth, and asset utilization.

References

1. http://www.analyticsinsight.net.
2. http://www.asianage.com.
3. http://fitthequint.com.
4. http://www.jiva.com.
5. Amin H, sharma R. How data mining is useful in Ayurveda, J Ayu herb med. 2016; (3):61-62.
6. 'NIWARANA' an artificial intelligence based system for traditional medicine.
   DOI: 10.13140/RG.2.219949.23522ER