Medical Affective Computing: Combining Affective Computing with Medical Informatics

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Abstract

AThe analysis of patient data, which can originate from a variety of sources and modalities, including electronic health records, the results of diagnostic tests, and medical scans, is the goal of the science and engineering field known as health informatics. Computational methods can be used to solve a very wide range of problems in the health area. Health informatics is a broad category of multidisciplinary disciplines that involves research into the conception, creation, and use of computational breakthroughs for bettering healthcare.

Keywords

Conception, Creation, Health care.

1. Introduction

The involved disciplines combine the fields of medicine with those of computing, especially computer engineering, software engineering, information engineering, bioinformatics, bio-inspired computing, theoretical computer science, information systems, data science, information technology, autonomic computing, and behaviour informatics [1]. American biomedical Informaticians Edward H. Shortliffe was a pioneer in the application of artificial intelligence to healthcare. In this field, artificial intelligence and machine learning algorithms are used to analyse, understand, and comprehend complex medical and healthcare data in ways that are similar to how humans think. AI specifically refers to computer algorithms‘ capacity to make approximations of conclusions based only on input data. Applications of AI include the establishment of treatment protocols, medication development, personalised medicine, patient monitoring, and patient care. Clinical decision support systems are a major area of industrial interest for the application of AI in the healthcare sector. Machine learning algorithms change as more data is gathered, enabling more reliable replies and solutions [2].

Many businesses are looking into the potential applications of big data in the healthcare sector. Numerous businesses look into the market potential for data assessment, storage, administration, and analysis technologies, which are all essential components of the healthcare sector [3]. Cleveland Clinic and Memorial Sloan Kettering Cancer Center are developing IBM‘s Watson Oncology. IBM also collaborates with Johnson & Johnson and CVS Health on the analysis of scientific publications to uncover new linkages for medication development and on the use of AI in the treatment of chronic diseases. In collaboration with the Knight Cancer Institute at Oregon Health & Science University, Microsoft‘s Hanover project examines medical data to identify the best cancer drug therapy alternatives for patients. The creation of programmable cells is another goal, as is the interpretation of medical images of tumour development [4].

The UK National Health Service is utilising Google‘s DeepMind platform to identify specific health concerns using information gathered by a mobile app. In a second project with the NHS, medical photos gathered from patients are analysed in order to create computer vision algorithms to identify malignant tissues.

Tencent is developing a number of medical services and systems. These include Tencent Doctorwork, WeChat Intelligent Healthcare, and AI Medical Innovation System (AIMIS), a diagnostic medical imaging service powered by artificial intelligence [5]. Applications that employ AI to provide medical consultation based on user medical histories and general medical knowledge include Babylon Health‘s GP at Hand, Ada Health, AliHealth Doctor You, KareXpert, and Your.MD. Users enter their symptoms through the app, which compares them against a database of ailments using speech recognition. After that, Babylon provides a suggested course of action while taking the user‘s medical history into account. Seven business model models have been successfully used by healthcare entrepreneurs to provide AI solutions to the market. These archetypes depend on the value produced for the target user (e.g., the focus on patients

versus the focus on healthcare providers and payers) and value capture techniques (e.g. providing information or connecting stakeholders).

2. Conclusion

In the area of medical imaging, it also functions. Additionally, businesses like UBTECH (Cruzr) and Softbank Robotics produce comparable robots (Pepper). A WhatsApp chatbot created by the Indian startup Haptik recently responds to inquiries on the deadly coronavirus in India. Large IT corporations like Apple, Google, Amazon, and Baidu all have their own AI research sections, as well as millions of dollars set aside for the acquisition of smaller AI-based companies, as the market for AI is continually developing. Machine learning in healthcare is also starting to be used by many automakers in their vehicles. New research initiatives are being conducted by businesses like BMW, GE, Tesla, Toyota, and Volvo to determine how to understand a driver‘s vital statistics and determine whether or not they are awake.

3. References

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