ISSN: 2090-4908
International Journal of Swarm Intelligence and Evolutionary Computation

OPEN ACCESS Freely available online

Perspective

Use of Artificial Intelligence in Diagnostic Medicine

Charles William*

Department of Information and Computer Technology, Tokyo University of Science, Tokyo, Japan

DESCRIPTION

Deep learning algorithms can handle increasing amounts of data from wearable's, smartphones, and other mobile monitoring sensors in various areas of medicine. At the moment, only a few clinical settings benefit from the use of artificial intelligence, such as the detection of atrial fibrillation, epilepsy seizures, and hypoglycemia, or disease diagnosis based on histo-pathological examination or medical imaging. Patients have long awaited the implementation of augmented medicine because it allows for greater autonomy and more personalized treatment; however, it has been met with resistance from physicians who were not prepared for such a shift in clinical practice. AI has the potential to transform surgical pathology practice by ensuring rapid and accurate results and allowing pathologists to focus on higher level diagnostic and consultative tasks such as integrating molecular, morphologic, and clinical information to make accurate diagnoses in difficult cases, determine prognosis objectively, and contribute to personalized care. Artificial intelligence (AI) is playing an increasingly important role in medicine. AI has the potential to revolutionize patient care in the coming years by optimizing personalized medicine and tailoring it to the needs of individual patients. AI was introduced to medicine gradually.

Some specialties, such as radiology, were early adopters of AI. Others, such as pathology, are only now beginning to use AI in clinical settings. The process is low-cost, and computational processing power is readily available. Data can be collected quickly by neural networks using image scanners, digital cameras, remote sensors, electronic appliances, or the Internet of Things (IoT). AI is capable of learning from both unstructured and unlabeled data. To carry out the Machine Learning (ML) process, it employs a hierarchical level of artificial neural networks. As previously stated, artificial neural networks used in AI are built similarly to the human brain, with neuron nodes linked together like a web. In contrast, traditional computer programmes construct analysis with data in a linear fashion. Deep learning systems' hierarchical design allows machines to process data in a nonlinear fashion. Advances in ML algorithms are allowing AI systems to replicate many medical tasks that currently require human expertise at levels of accuracy comparable to or greater than that achieved by human experts. Deep learning applications are increasingly being trained with large amounts of annotated data sets in medicine, freeing up medical specialists to focus on more productive tasks and projects. The potential of AI in medicine is limitless, and it has the potential to significantly improve health care delivery in clinical practice.

SIGNIFICANCE

Computer-based decision support systems based on Machine Learning (ML), it has the potential to revolutionize medicine by performing complex tasks that are currently assigned to specialists. ML systems can improve diagnostic accuracy, increase thorough put efficiency, streamline clinical workflow, reduce human resource costs, and improve treatment options.

However, effective AI use in medicine necessitates synergistic cross-disciplinary competencies. Despite recent promising biomedical and biomarker discoveries, individually tailored care is still a long way off, and novel therapies emerging from preclinical trials are rarely translatable to evaluation for diagnostic and therapeutic potential. The gap between experimental data on new anticancer molecules and their actual use in diagnosis and therapy is caused by a variety of factors, including biological differences between human disease and animal models, inconsistencies in experimental methodologies, incorrect interpretation of experimental results, a lack of validation of such data by pathologists with long-term experience in animal cancer models, and so on. For example, personalized care in oncology necessitates the collaborative efforts of several disciplines, including nuclear medicine, radiology, and surgical pathology, all of which represent complementary approaches to diagnosis, prognosis, and therapeutic response evaluation. A structural collaboration model between these disciplines can hasten the development of a medical paradigm that recognizes the uniqueness of each human being.

Correspondence to: Charles William, Department of Information and Computer Technology, Tokyo University of Science, Tokyo, Japan, E-mail: william.charles@mic.edu.ca

Received: 21-Nov-2022, Manuscript No. SIEC-22-19441; **Editor assigned:** 23-Nov-2022, Pre QC No. SIEC-22-19441 (PQ); **Reviewed:** 07-Dec-2022, QC No SIEC-22-19441; **Revised:** 16-Dec-2022, Manuscript No. SIEC-22-19441 (R); **Published:** 26-Dec-2022, DOI: 10.35248/2090-4908.22.11.289.

Citation: William C (2022) Use of Artificial Intelligence in Diagnostic Medicine. Int J Swarm Evol Comput. 11:289.