Application and features of AI in medical diagnosis

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Abstract - Artificial Intelligence aims to mimic the human cognitive powers. AI is also into healthcare where it's been used for automating the diagnosis processes powered by increased availability of healthcare data**.** At present, in many developed countries, artificial intelligence has been widely used in people's production and life, bringing great convenience to people's life and production. In addition, in the field of medical health, artificial intelligence has been widely used and developed, especially in health management, hospital management, medical imaging, risk management and so on. Globally, a large number of large technology companies have begun to study the application of artificial intelligence in the medical field, such as Google, Microsoft and so on.For example, in the diagnosis and treatment of diabetes and neurological diseases, Google has begun in-depth research, and made great progress. This thesis expounds the specific application and development of AI in medical field, and points out that with the continuous progress of AI technology, revolutionary development in medical field can be achieved with great sincerity, and then the patients can recover well.However, there are also challenges associated with implementing AI in medical diagnosis, such as the need for large, high-quality datasets and concerns about data privacy and security. Despite these challenges, AI has the potential to revolutionize medical diagnosis and transform patient care [1].

Keywords: Diagnosis, Artificial Intelligence, Cell Biology, Technology, Clinical Medicine, Medical Imaging, Neurology

I. INTRODUCTION

Artificial Intelligence is implemented in the medical field to analyze complex data patterns in an ever-expanding data space of symptomatic- diagnosis. Persisting traditional researches conducted in this field lack when it comes to providing a definite and concrete methodology to create a system that considers all variables of diagnosis, specifically those requiring human interaction and intervention. Medical Diagnosis, thereby, becomes a challenging process considering the erratic trends and volumes of data concerning the diverse symptoms that can lead to a particular disease, as well as the minute disparities of symptoms amidst two or more diseases. AI gives direction to data-search algorithms for familial data analysis as well disparity

recognition. At present, artificial intelligence has been widely used in the medical field. In the medical field, especially in medical imaging, nutrition, hospital management and so on, there are artificial intelligence figures. It can be said that in the future, the medical field cannot be separated from artificial intelligence, which can promote the development of the medical field. At present, in the field of medical health, artificial intelligence is mainly used in medical robots, artificial intelligence medical imaging and so on. At the same time, thanks to the invention of two-dimensional code, artificial intelligence can shine brightly in the medical field. In addition, due to the continuous development and application of artificial intelligence, the time of drug research and development can be greatly shortened and the cost of research and development can be saved. At the same time, in many hospitals, artificial intelligence robots are also beginning to be widely used. Moreover, in the field of diagnosis and treatment, artificial intelligence equipment also improves the efficiency and accuracy of medical diagnosis and

treatment. At present, medical workers in our country are also beginning to invest in the research and development of artificial intelligence, and to analyze and study many aspects of the medical field, such as skin diseases, medical imaging and so on.[2][3].

## II. THE NECESSITY OF ARTIFICAL INTELLIGENCE TECHNOLOGY IN MEDICAL CELL BIOLOGY

Artificial intelligence (AI) has the potential to revolutionize the way doctors diagnose and treat patients by providing assistance in the diagnostic process. AI algorithms can analyze medical data and identify patterns and correlations that are not visible to the human eye, allowing for more accurate and efficient diagnoses. For example, AI can be used to analyze medical images such as X- rays, CT scans, and MRIs to detect subtle changes that may indicate the presence of a disease. AI can also analyze patient data such as medical history, symptoms, and lab results to identify potential diagnoses and recommend appropriate treatment plans. One of the main advantages of using AI in diagnosis is

the ability to process large amounts of data quickly and accurately. This can help doctors make more informed decisions and avoid diagnostic errors that can have serious consequences for patients. AI can also assist doctors in prioritizing cases based on severity and urgency, which can improve patient outcomes and reduce wait times for treatment. AI was compared with 15 senior doctors from famous hospitals in China. The final result was astonishing and AI won easily. Compared with traditional method, it not only significantly reduces the workload of pathologists, but also greatly improves the accuracy of diagnosis and treatment in the medical field. [6]

However, it is important to note that AI should not replace human doctors in the diagnostic process. Rather, AI should be used as a tool to support and enhance the work of doctors. By working together, AI and doctors can provide patients with the best possible care, leveraging the strengths of both humans and machines. As AI technology continues to advance, it is likely that we will see more widespread use of AI in medical diagnosis, leading to improved patient outcomes and better healthcare overall. [7]

THE APPLICATION OF ARTIFICIAL INTELLIGENCE IN MEDICAL CELL BIOLOGY

Artificial intelligence (AI) technology is being increasingly applied in the field of dermatology for the diagnosis and management of skin diseases. AI algorithms can analyze large datasets of skin images, patient data, and treatment outcomes, and identify patterns that may not be visible to the human eye. This can assist dermatologists in making accurate diagnoses, providing personalized treatment recommendations, and improving patient outcomes. While there are challenges that need to be addressed, such as the need for diverse datasets and ethical frameworks, the use of AI in dermatology holds great promise for the future of skin disease, diagnosis and management. Because the skin has the characteristics of exposure, it is easy to obtain the data of skin diseases, which greatly improves the accuracy and feasibility of artificial intelligence. The accuracy rate of diagnosis of skin cancer and melanoma reached more than 90% .In addition, in order to validate the algorithm, 1942 skin images confirmed by pathological examination were used to compare the consistency of the algorithm and dermatologists in distinguishing malignant epidermal lesions from benign lesions or melanocytic lesions. It is concluded that malignant and benign lesions with many visual characteristics are difficult to distinguish. Researchers recruited 21 dermatologists from Stanford Medical School to test the results. The results show that AI has achieved the same results as dermatologists. The research results can already be used as smartphone applications. In other words, mobile phones can effectively detect skin cancer,23 significantly reducing the cost of medical testing[4][5].
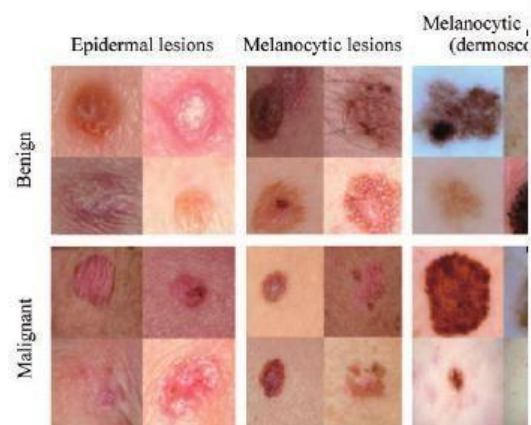
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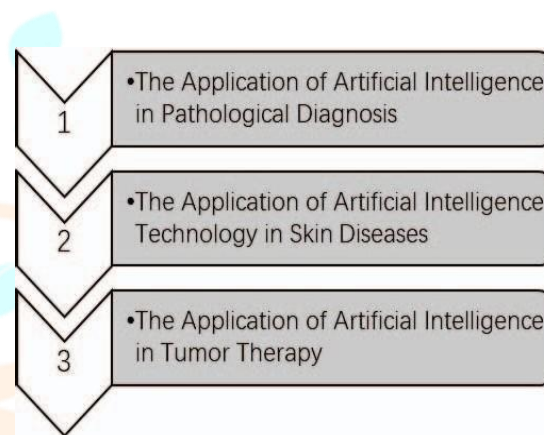
The artificial intelligence technology in medical cell biology

III. CONCLUSION AND PROSPECT

According to McKinsey's forecast, the global smart medical industry will reach 25.4 billion US dollars by 2025, accounting for one fifth of the global AI market. At present, there are still two kinds of serious problems in the application of AI in medical field. First, the number of samples is small. At present, the amount of data about artificial intelligence algorithm training is very low, and there is a lack of authoritative doctors to label samples. Therefore, because there is no large number and high-quality sample set, the accuracy of artificial intelligence algorithm is greatly reduced, and the practicability is also greatly reduced. Secondly, there is a serious disconnect between the actual demand for medical care and the applicationmarket situation. Because the quality of sample set is low and the number is small the accuracy of AI needs to be improved. At the same time, in order to make AI better applied in the medical field. We should collect samples on a large scale, and let authoritative doctors conduct quantitative analysis and research, and then put forward scientific and effective diagnosis and treatment method. Nevertheless, the currently available solutions and systems still require a considerable degree of human intervention, and a completely independent and supervision free system doesn't exist. Still,

the implementation of the systems discussed does reduce the time hindrances in the long- run and also improves the overall efficiency of the diagnosis system to a significant extent.

Furthermore, the intermediary components and methods provide a huge resultant data-set after due processing which creates a scope for creation of a future system that relies the least on manual intervention. Lastly, it was also deduced that out of all the methods studies, clustering is the most efficient as well as feasible and can be considered a center-point for future researches and projects in this domain.

IV. ACKNOWLEDGEMENT

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