Prof. Tao Wu

Dr. Tao Wu is currently the Vice President of Shanghai Jiao Tong University School of Medicine. He is the Vice President of China Hospital Management of Association, the Vice Commissioner for Medical Engineering Transformation and Healthcare Industry Integration Society of Chinese Research Hospital Association, and the Chairman of Shanghai United Youth Association in Medicine and Health. In 2019, Dr. Tao Wu is Selected in the Shanghai Leading Medical Talents Training Project by Shanghai Municipal Health Commission. Dr. Tao Wu is the Editor-in-Chief for the International Journal of Intelligent Systems Technologies and Applications. He also serves as the Editor for the Knowledge-Based Systems and the Journal of Organizational and End User Computing. His recent research interests in Hospital Management Information System, Big Data and Artificial Intelligence in Medicine and Healthcare. He has published over 50 peer-reviewed journal articles.

Speech Topic

Intelligence, Wisdom and Enjoyment

Practice and Exploration of Intelligent Telemedicine Robot Based on "Human in the Loop"

Abstract

The increasing integration of Artificial Intelligence has been yielding greater productivity, the result of which has also led to emerging research and the development of new

technologies in medicine and healthcare. In 2017, the State Council of China issued the Development Plan for a New Generation of Artificial Intelligence, which clearly pointing out that the key to develop Intelligent Medicine is to "develop convenient and efficient intelligent services".

Nowadays human-machine collaboration based on medical AI may solve the issue of unbalanced development from the perspective of medical resource distribution and allocation, and it brings new vitalities to a variety of medical fields in China. We have been establishing a new generation of intelligent telemedicine service system by combining humanoid robots with cognitive technologies such as deep learning, voice recognition, and natural language processing, which can complete higher-order tasks with AI assistant that required the perceptual and judgement capabilities of humans in the past. We develop a new generation of the intelligent telemedicine robot cluster control system, realize the functions of task planning, route planning and automatic formation. We design and build an intelligent medical robot-based telemedicine platform between medical alliance, which can provide online consultation, diagnosis, treatment and other services for the primary hospitals, so as to improve the quality and efficiency of hierarchical medical services. Meanwhile, this intelligent medical robot-based telemedicine platform can be applied in complex and interactive clinical case scenarios, such as remote MDT, emergency rescue and Isolated diagnosis and treatment.

We are now launching a new project named the "Super Doctor Plan". The forthcoming strategy is to develop "Human in the Loop" intelligent system based on AI technologies, and it focuses efforts on continuously meeting the demands on

healthcare and senior care, by exploring cooperation between AI developers and healthcare specialists to establish precision medical system. Our ultimate goal is to establish Human-machine Hybrid Enhanced Precision Medical System, provide scientific and precise intelligent medical services to patient on medical diagnosis, comprehensive surgery, etc. It can enhance the capabilities of healthcare practitioners, reduce the workload of humans, and improve the medical service quality.