

Artificial Intelligence in Medicine

Jihoon Jeong

Advisor, Lunit Inc., Seoul, Korea. Partner, Digital Healthcare Partners, Seoul, Korea
Senior Teaching Fellow, Department of Media and Communications, Kyung Hee Cyber University, Seoul, Korea

Recently, a variety of artificial intelligence technologies have been applied to medical and healthcare fields, and many achievements have been made. However, the term artificial intelligence has a wide range of technologies, and its characteristics vary according to the area of medicine to which it is applied. Therefore, it is very difficult to cover them all in one review. In this edition, we have published six excellent reviews of the different artificial intelligence technologies applied to different medical areas.

First, Dr. Choi, who wrote many articles on IBM Watson in Korea, discussed clinical validation of IBM Watson for Oncology [1]. His article will be very helpful to understand the concepts and characteristics of IBM Watson for Oncology and also summarized the situation to date on various controversies related to its clinical efficacy. Second, Dr. Jung et al talked about deep learning medical image analysis focused on computed tomography (CT) and magnetic resonance imaging (MRI) [2]. Deep learning is under revolutionizing various medical imaging technologies and processes. CT and MRI are one of the most important imaging modalities affected by deep learning. Third, Dr. Jeong also wrote a review about deep learning medical image analysis, but this review was focused on cancer screening [3]. Dr. Jung and Jeong are currently pursuing commercialization of deep learning technologies with innovative startups Vuno and Lunit respectively in Korea and described not only on academic research but also real clinical field application experiences together. Fourth, Dr. Song who is a pathologist in Samsung medical center shared his review on artificial intelligence technologies in pathology [4]. His review

covered from digital pathology to the future of pathology AI. Fifth, Dr. Shin who is expert on healthcare data and computer science reviewed status and direction of healthcare data in Korea [5]. Current accomplishments of artificial intelligence technology were possible because of successful collection and management of various data on the internet. Therefore, how to collect and manage healthcare data has a great influence on the future development of medical artificial intelligence technology. Last, Dr. Kim discussed the recent trend of deep genomics on genomic medicine [7]. Genomic medicine is a key component of personalized medicine and deep learning technology is expected to bring about revolutionary changes to genomic medicine.

These six reviews are not enough to explain the artificial intelligence technologies that affect medicine. However, there have not been many attempts by experts with different majors and technical expertise to look at the innovative changes in medicine that artificial intelligence technology will bring in different perspectives and applications. This edition of reviews is therefore of great significance in helping to understand the relationship between medicine and artificial intelligence.

REFERENCES

1. Yoon Sup Choi. Concepts, Characteristics, and Clinical Validation of IBM Watson for Oncology. Hanyang Med Rev 2017;37:49-60.
2. Kyu-Hwan Jung, Hyunho Park, Woochan Hwang. Deep Learning for Medical Image Analysis: Applications to Computed Tomography and Magnetic Resonance Imaging. Hanyang Med Rev 2017;37:61-70.

Correspondence to: Jihoon Jeong

Advisor, Lunit Inc., Seoul, Korea. Partner, Digital Healthcare Partners, Seoul, Korea
Senior Teaching Fellow, Department of Media and Communications, Kyung Hee Cyber University, Seoul, Korea
Address: Advisor, Lunit Inc., 6th Floor, 175 Yeoksam-ro, Gangnam-gu, Seoul, Korea
Tel: +82-10-2512-2540, E-mail: jjeong@lunit.io

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited

3. Jihoon Jeong. Deep Learning for Cancer Screening in Medical Imaging. Hanyang Med Rev 2017;37:71-76.
4. Sang Yong Song. Introduction of Artificial Intelligence in Pathology. Hanyang Med Rev 2017;37:77-85.
5. Yu Rang Park, Soo-Yong Shin. Status and Direction of Healthcare Data in Korea for Artificial Intelligence. Hanyang Med Rev 2017;37:86-92.
6. Tae Hyung Kim. A Review of Deep Genomics Applying Machine Learning in Genomic Medicine. Hanyang Med Rev 2017;37:93-98.