AI-Empowered Radiology

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It is highly likely and foreseeable that AI technology will enhance the quality and efficiency of the current clinical practice across many specialties and even make some activities in clinical practice obsolete. In particular, AI will have a great impact on medical imaging in particularly radiology, because from its very inception, radiology is and has been the most technology-driven medical discipline. Radiology has thrived with the remarkable advances in computers, imaging, and information technology. With imaging and key information providers, radiology has firmly established itself as an essential partner in the practice of medicine for numerous clinical applications.

Currently, radiologists in many countries are overwhelmed by clinical workload and hoping for AI technology solutions to improve the quality and efficiency of clinical work and job satisfaction. To meet this demand, many academic research organizations and healthcare and IT companies are making big investments in medical imaging AI research and development. A number of promising research outcomes and software products have been recently published. For instance, in the past 7 years, remarkable advances in AI (Deep Learning) were made in some focused clinical applications such as lung nodule detection in chest CT, interpretation of screening mammography, image segmentation and quantification where AI systems were capable of surpassing human-level performance. However, AI technology in the current form is not a magic bullet and is not fully mature. Rigorous quality control and evaluation are still required to integrate AI technology in daily clinical practice.

In this presentation, we will review and discuss the current state and future direction of AI imaging technology in radiology.