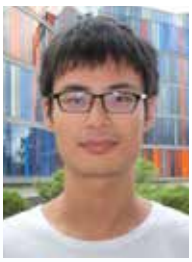
THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Department of Computing
電子計算學系

Research Seminar

Towards Intelligent Healthcare: Medical Image Analysis and Reconstruction with Deep Learning



Dr Lequan Yu
Postdoctoral Fellow
Department of Radiation Oncology
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Date : 30 March 2020 (Monday)
Time : 11:00 a.m. - 12:00 noon

▶ Abstract

Medical imaging is a critical step in modern healthcare procedures. Accurate interpretation of medical images, e.g., CT, MRI, Ultrasound, histology images, and fundus images, plays an essential role in computer-aided diagnosis, assessment, and therapy. While deep learning provides an avenue to deliver automated medical image analysis and reconstruction via data-driven representation learning, there remain a series of unique challenges towards intelligent medical imaging, such as high-dimensional data processing, insufficient and heterogeneity training data, and high annotation cost. In this talk, I will discuss our recent efforts on building intelligent systems for medical image analysis and reconstruction, such as anatomical structure segmentation, lesion detection, cancer diagnosis, and CT image reconstruction. The proposed methods cover a wide range of deep learning and machine learning topics, including network architecture design, semi-supervised learning, domain adaptation, multi-modality learning, integrating domain knowledge, etc. The promising future directions of AI-powered healthcare will also be covered in this talk.

▶ About the Speaker

Dr Lequan Yu is a postdoctoral fellow at the Department of Radiation Oncology at Stanford University. He has received his Ph.D. degree in Computer Science and Engineering from The Chinese University of Hong Kong in 2019, and his B.Eng. degree in Computer Science and Technology from Zhejiang University in 2015. His current research lies at the intersection of medical imaging and artificial intelligence. He also has expertise in deep learning for 3D vision. He has published 20+ top-tier papers in this area on topics of medical image segmentation, computer-aided diagnosis, semi-supervised learning, domain adaptation, and multi-modality learning. He was on the shortlist for Young Scientist Award at the Hong Kong Institution of Science in 2019. He also won the Best Paper Awards of Medical Image Analysis-MICCAI in 2017 and International Workshop on Machine Learning in Medical Imaging in MICCAI 2017. He serves as the reviewer for several top-tier journals and conferences, including IEEE-TMI, IEEE-TIP, IEEE-TNNLS, IEEE-TBME, IEEE-TASE, MedIA, SIGGRAPH, CVPR, ICCV, ECCV, MICCAI, etc. His current Google Scholar citation has reached 2700+ with h-index 19.

ALL are welcome!

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