

Speech Title: Image and Signal Processing for Infectious Disease Diagnosis

Abstract: COVID-19 is a pandemic disease that caused more than 6.94 million deaths until 18/June/2023. X-ray and CT scans are two popular chest imaging techniques used in radiology to get detailed images of the chest noninvasively for diagnostic purposes. Traditional manual analysis of X-ray or CT-based scans is tedious and error-prone. To solve the problem, our lab develops and applies new image and signal processing theories and methods, such as advanced pooling networks, graph convolutional networks, attention neural networks, weakly supervised networks, vision transformers, etc. We also use cloud computing to run our developed app on the remote server to help doctors in the suburban area. Two other chest-related infectious diseases: secondary pulmonary tuberculosis and community-acquired pneumonia, will be covered in this talk.

Biography: Prof. Yudong Zhang is a Chair Professor at the School of Computing and Mathematical Sciences, University of Leicester, UK. His research interests include deep learning and medical image analysis. He is the Fellow of IET, Fellow of EAI, and Fellow of BCS. He is the Senior Member of IEEE and ACM. He is the Distinguished Speaker of ACM. He was 2019, 2021 & 2022 recipient of Clarivate Highly Cited Researcher. He has (co)authored over 400 peer-reviewed articles. There are more than 60 ESI Highly Cited Papers and 6 ESI Hot Papers in his (co)authored publications. His citation reached 26344 in Google Scholar (h-index 90). He is the editor of Neural Networks, IEEE TITS, IEEE TCSVT, IEEE JBHI, etc. He has conducted many successful industrial projects and academic grants from NIH, Royal Society, British Council, GCRF, EPSRC, MRC, BBSRC, Hope, and NSFC. He has served as (Co-)Chair for more than 60 international conferences (including more than 20 IEEE or ACM conferences). More than 70 news presses have reported his research outputs, such as Reuters, BBC, Telegraph, Mirror, Physics World, UK Today News, etc.