

Deep Neural Network for 3D Classification Problems

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ABSTRACT

In recent years, research in deep neural network and deep learning has great progress in 1D classification problem (speech recognition) and 2D classification problem (image classification/recognition). In this talk, deep neural network approach for 3D classification problems will be discussed. Multi-scale 3D deep convolutional neural network (M3D-DCNN) is proposed for hyperspectral data classification, which could jointly learn spatial-spectral features from HSI data in an end-to-end approach. 3D deep convolutional neural network is also designed for large scale action recognition from 3D skeleton videos. Compared with other state-of-the-art methods, better or comparable performance in the standard datasets are demonstrated.

BIOGRAPHY

Mingyi He obtained his Bachelor and Master Degrees from Northwestern Polytechnical University and Ph.D. from Xidian University. He has been with the School of Electronics and Information, NPU, where he is a Professor of Signal and Information Processing. He is the Founder and Director of International Joint Center and Shaanxi Key Laboratory of Information Acquisition and Processing. He has conducted a number of national projects and Int. joint research projects (such as 863 HiTech programs, NSFC major Int. joint project (collaborated by ANU in Australia and MSU in USA) and NSFC key project in China; Rockwell Int. Collins project in USA etc. He has published more than 300 papers in the IEEE Trans. PAMI, TGRS, Int. Journal of Computer Vision, Signal Processing, IEEE's ICIP, China SIP, CVPR, IGARSS, ICIEA, etc. He is the author or coauthor of five books (including Digital Image Processing, Neural Network and Signal Processing Systems), etc. He has made valuable contributions to hyperspectral image processing, computer vision and image processing, neural networks and intelligent information processing with notable applications to X-ray image processing for luggage inspection, and hyperspectral image processing applications etc. Prof He has been a member of the Advisor Committee of China National Council for Higher Education on Electronics and Information, a member of NSFC reviewing expert group and the Chinese Lunar Exploration Expert Group, the Vice-President of Shaanxi Institute of Electronics, the Vice-Director of the Spectral Imaging Earth Observation Committee of China Committee of International Society of Digital Earth, the Vice-President of the Space Remote Sensing Society (CSA), and the Vice-Chairman of IET Xi'an Network. He has served as General chairs, Co-chairs, and TPC co-chairs for IEEE SPS sponsored conferences etc. He was the recipient of the IEEE CVPR 2012 Best Paper Award, which was recognized as the "2012 Chinese Scientist of the Year," and was awarded ten scientific prizes from China and the governmental lifelong subsidy for outstanding contribution to higher education and scientific research by the State Council of China. Prof He is Guest of IEEE JSTARS and member of APSIPA's SIP theory and method committee. He is a senior member of IEEE and CIE.

All are welcome!



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