学术报告通知

报告人： Professor **Xiangjian He**, 澳大利亚悉尼科技大学
题　　目： A Generative Model for Recognizing Mixed Group Activities in Still Images
时　　间： 2016 年 4 月 25 日(周一)10:00-11:00
地　　点： 电院群楼 2-410 会议室
邀请人： 杨杰教授

Professor **Xiangjian He** 简历：

Professor Xiangjian He is the Director of Computer Vision and Pattern Recognition Laboratory at the Global Big Data Technologies Centre (GBDTC) and a Leader of the Network Security research team at the Centre for Real-time Information Networks (CRIN), at the University of Technology, Sydney (UTS). He is also the Director of UTS-NPU International Joint Laboratory on Digital Media and Intelligent Networks. He is an IEEE Senior Member and has been an IEEE Signal Processing Society Student Committee member. He has been awarded 'Internationally Registered Technology Specialist' by International Technology Institute (ITI). He has been carrying out research mainly in the areas of image processing, network security, pattern recognition and computer vision in the previous years. He has played various chair roles in many international conferences such as ACM MM, MMM, IEEE TrustCom, IEEE CIT, IEEE AVSS, IEEE TrustCom, IEEE ICPR and IEEE ICARCV. In recent years, he has many high quality publications in IEEE Transactions journals such as IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Multimedia, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Cloud Computing, IEEE Transactions on Reliability, IEEE Transactions on Consumer Electronics, and in Elsevier's journals such as Pattern Recognition, Signal Processing, Neurocomputing, Future Generation Computer Systems, Computer Networks, Computer and System Sciences, Network and Computer Applications. He has also had papers published in premier international conferences and workshops such as ACL, IJCAI, CVPR, ECCV, ACM MM, TrustCom and WACV. He has recently been a guest editor for various international journals such as Journal of Computer Networks and Computer Applications (Elsevier) and Signal Processing (Elsevier). He is currently an Advisor of HKIE Transactions. Since 1985, he has been an academic, a visiting professor, an adjunct professor, a postdoctoral researcher or a senior researcher in various universities/institutions including Xiamen University, China, Shanghai Jiaotong University, China, University of New England, Australia, University of Georgia, USA, Electronic and Telecommunication Research Institute (ETRI) of Korea, University of Aizu, Japan, Hongkong Polytechnic University, and Macau University.

报告摘要：

Recognizing multiple mixed group activities from one still image is not a hard problem for humans but remains highly challenging for computer recognition systems. When modelling interactions among multiple units (i.e., more than two groups or persons), the existing approaches tend to divide them into interactions between pairwise units. However, no mathematical evidence supports this transformation. Therefore, these approaches' performance is limited on images containing multiple

activities. In this talk, we present a generative model to provide a more reasonable interpretation for the mixed group activities contained in one image. We design a four level structure and convert the original intra-level interactions into inter-level interactions, in order to implement both interactions among multiple groups and interactions among multiple persons within a group. The proposed four-level structure makes our model more robust against the occlusion and overlap of the visible poses in images. Experimental results demonstrate that our model makes good interpretations for mixed group activities and outperforms the state-of-the-art methods on the Collective Activity Classification dataset.