專 題 演 講

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題 目： 影像品質回復技術:從稀疏編碼到深度學習

大 綱：

Image restoration is a classical problem in image processing and computer vision community. The problem is challenge and ill-posed. Based on the fact that images in the real world may usually suffer from possible noises of different types, and the effectiveness of the related vision-based applications may be degraded accordingly. Therefore, it is important to restore the degraded images to the corresponding acceptable visual qualities. In this talk, I will focus on the restoration of bad weather images, such as rainy or hazy images. I will first introduce our contributions to bad weather image restoration via sparse coding relying on the intrinsic sparse property of images, including the first single image-based rain streaks removal framework in the computer vision community. Recently, relying on the rapid development of deep learning techniques with great success in numerous perceptual tasks, several deep learning-based bad weather image restoration methods have been also presented. In addition, sparse coding and deep learning have also been shown to be with certain relation. I will also present our recent contributions to single image haze removal and rain streak removal via deep learning, which have been shown to achieve state-of-the-art performances. I will also briefly introduce some our on-going works in other types of single image restoration (e.g., restoration of compressed images, noisy image, and underwater images) and discuss possibly future research directions.

簡 歷：

Li-Wei Kang (康立威) received his Ph.D. degree in Computer Science from National Chung Cheng University, Chiayi, Taiwan, in 2005. Since Aug. 2019, he has been with the Department of Electrical Engineering, National Taiwan Normal University, Taipei, Taiwan, as an Associate Professor. Before that, he worked for the Department of Computer Science and Information Engineering, National Yunlin University of Science and Technology, Yunlin, Taiwan, as an Associate Professor from Aug. 2016–July 2019 and an Assistant Professor from Feb. 2013–July 2016. His research interests include multimedia content analysis and multimedia communications. Dr. Kang has been a Multimedia Systems & Applications Technical Committee Member, IEEE CAS Society. He received a top 10% Paper Award from the IEEE MMSP 2013, the best performance award from the Social Media Prediction Challenge of the ACM MM 2019, and the best paper award of the APSIPA ASC 2020.