國立中興大學　科學與資訊計　研究所

學術演講

主講人：邵皓強 教授

講題：
Domain-transferred face augmentation net

摘要：

The performance of a convolutional neural network (CNN) based face recognition model largely relies on the richness of labeled training data. However, it is expensive to collect a training set with large variations of a face identity under different poses and illumination changes, so the diversity of within-class face images becomes a critical issue in practice. In this paper, we propose a 3D model-assisted domain-transferred face augmentation network (DotFAN) that can generate a series of variants of an input face based on the knowledge %about disentangled face representation distilled in advance from huge open face datasets. distilled from existing rich face datasets of other domains. Extending from StarGAN's architecture, DotFAN integrates with two additional subnetworks, i.e., face expert model (FEM) and face shape regressor (FSR), for latent facial code control. While FSR aims to extract face attributes, FEM is designed to capture a face identity. With their aid, DotFAN can separately learn facial feature codes and effectively generate face images of various facial attributes while keeping the identity of augmented faces unaltered. Experiments show that DotFAN is beneficial for augmenting small face datasets to improve their within-class diversity so that a better face recognition model can be learned from the augmented dataset.

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