

專 題 演 講

講 者： Qi Li (李祁) (Auburn University)

題 目： A cost-effective method for improving and re-purposing large, pre-trained GANs

摘 要：

Large, pre-trained generative models have been increasingly popular and useful to both the research and wider communities. Specifically, BigGANs a class-conditional Generative Adversarial Networks trained on ImageNet---achieved excellent, state-of-the-art capability in generating realistic photos. However, fine-tuning or training BigGANs from scratch is practically impossible for most researchers and engineers because (1) GAN training is often unstable and suffering from mode-collapse; and (2) the training requires a significant amount of computation, 256 Google TPUs for 2 days or 8xV100 GPUs for 15 days. Importantly, many pre-trained generative models both in NLP and image domains were found to contain biases that are harmful to society. Thus, we need computationally-feasible methods for modifying and re-purposing these huge, pre-trained models for downstream tasks. In this paper, we propose a cost-effective optimization method for improving and re-purposing BigGANs by fine-tuning only the class-embedding layer. We show the effectiveness of our model-editing approach in three tasks:(1) significantly improving the realism and diversity of samples of complete mode-collapse classes;(2) re-purposing ImageNet BigGANs for generating images for Places365; and (3) de-biasing or improving the sample diversity for selected ImageNet classes

簡 歷：

Qi Li (李祁) is a Ph.D. student at Auburn University working with Dr. Ku. He got his master's degree in Dr. Nguyen's AI Lab at Auburn University in 2020. His research focuses on Deep Learning, specifically, the robustness of Deep Neural Networks and Human pose estimations. He published his works on CVPR, ACCV conference, and got a Best Application Paper Honorable mentioned award at ACCV 2020.