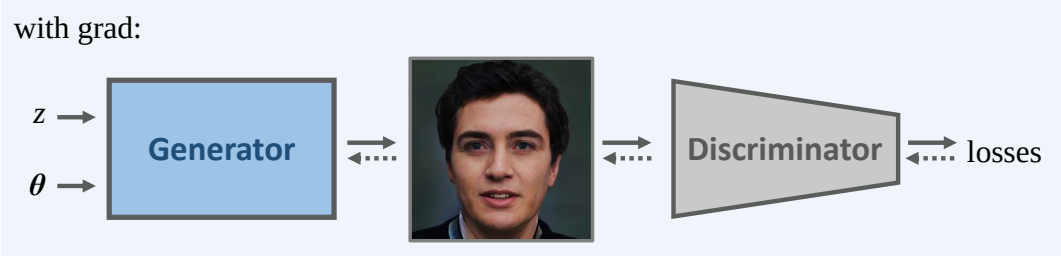
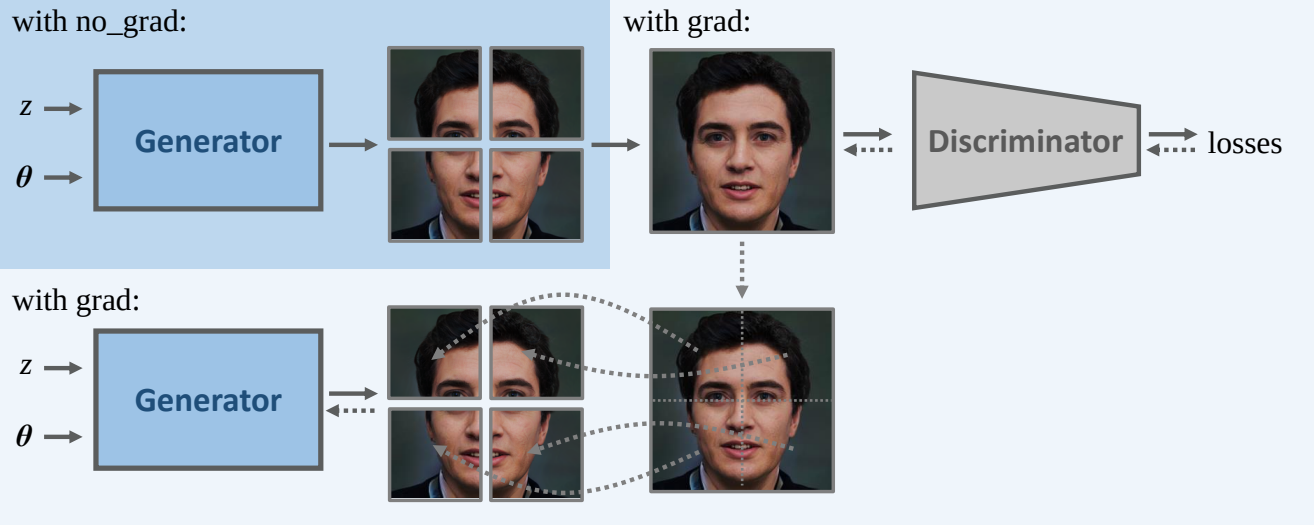



(a) Original forward and backward process




(b) Patch-level forward and backward process

The above figure shows the difference between the original training process and the patch-level training process. The original process synthesizes a whole image in a single forward pass and retains its computation graph for backward gradient calculation, which can be memory consuming. We provide a patch-level forward and backward process to reduce the memory cost during training. At the first stage, we generate each patch of the final image with gradient calculation disabled; then we construct the whole image using the generated patches and send it to the discriminator for loss computation, and record the gradient backpropagated from the losses to the generated image. At the second stage, we re-generate each patch with gradient calculation enabled, combine the previously recorded image gradient with the backward process of each patch, and accumulate all gradients to update the network parameters.