

**ada**

# Adaptive Discriminator Augmentation

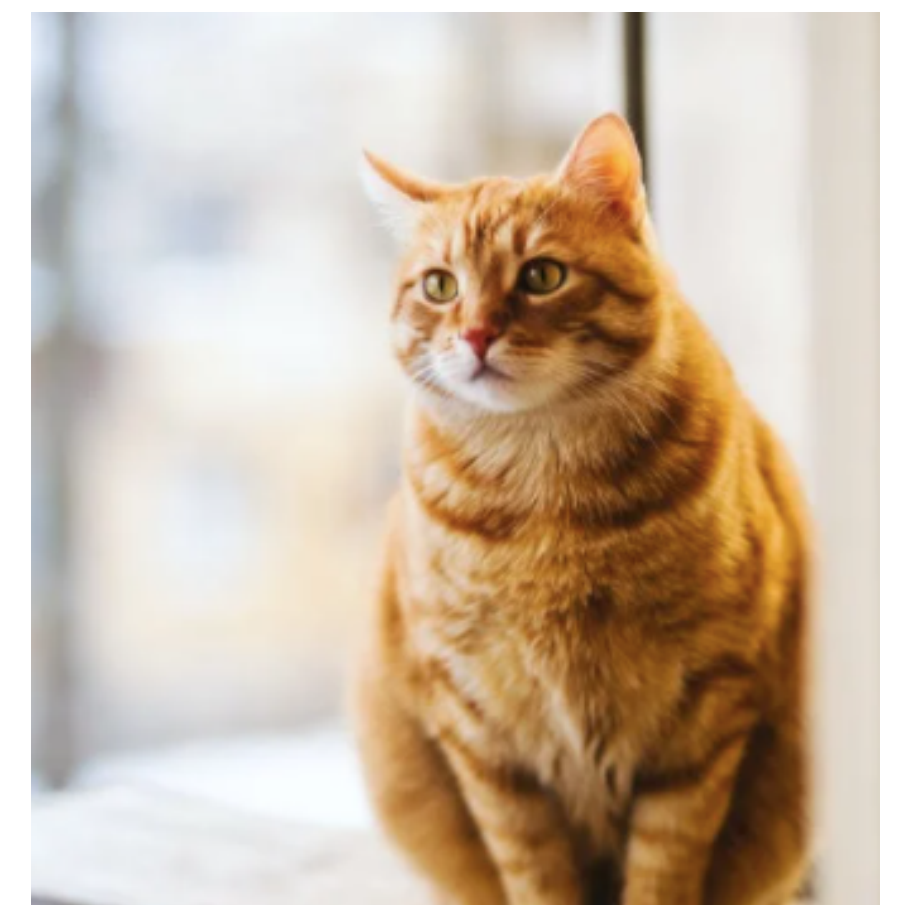
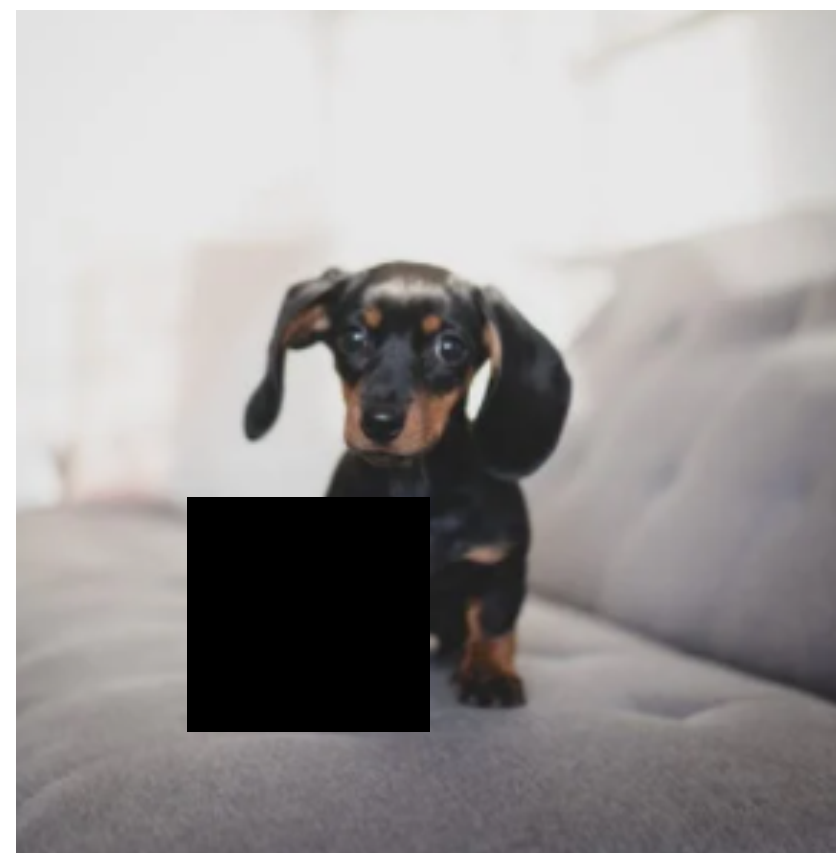
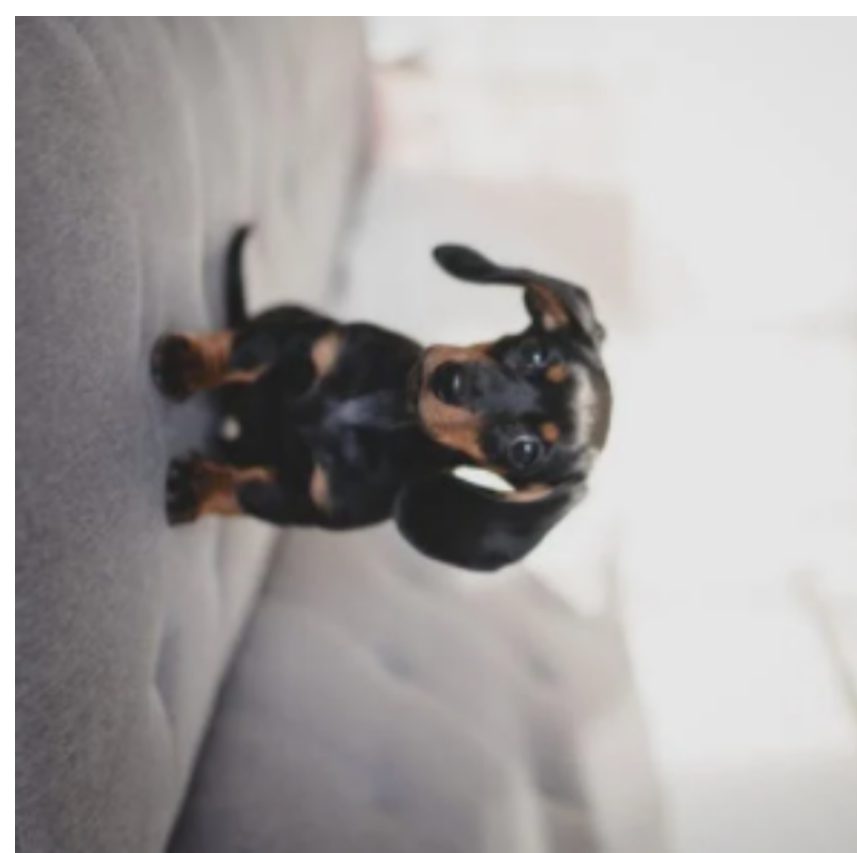
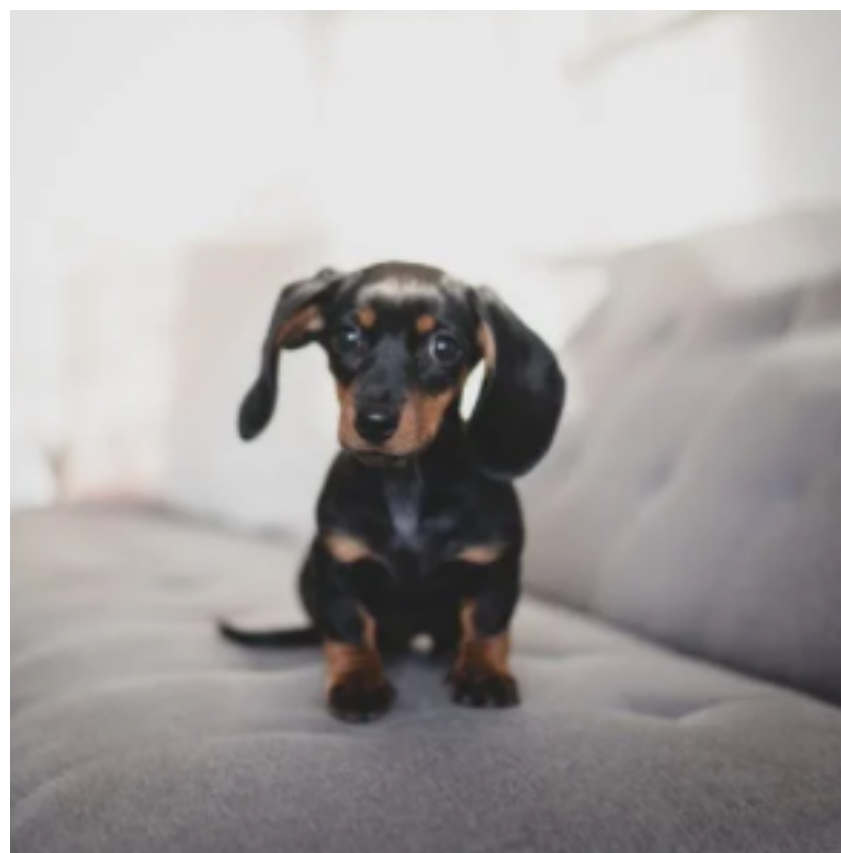
## Augmentations that **leak**

- 1000 장 정도의 적은 양의 training data -> Discriminator overfit 발생 !
- 이것을 방지하려면 ? 데이터 수를 늘려야한다 ! But how ?

## Data Augmentation 방법

*still dogs !*

1) “Leaking” Augmentations -> 하지만 **rotated, blue colored 된 data 가 생산됨 !**

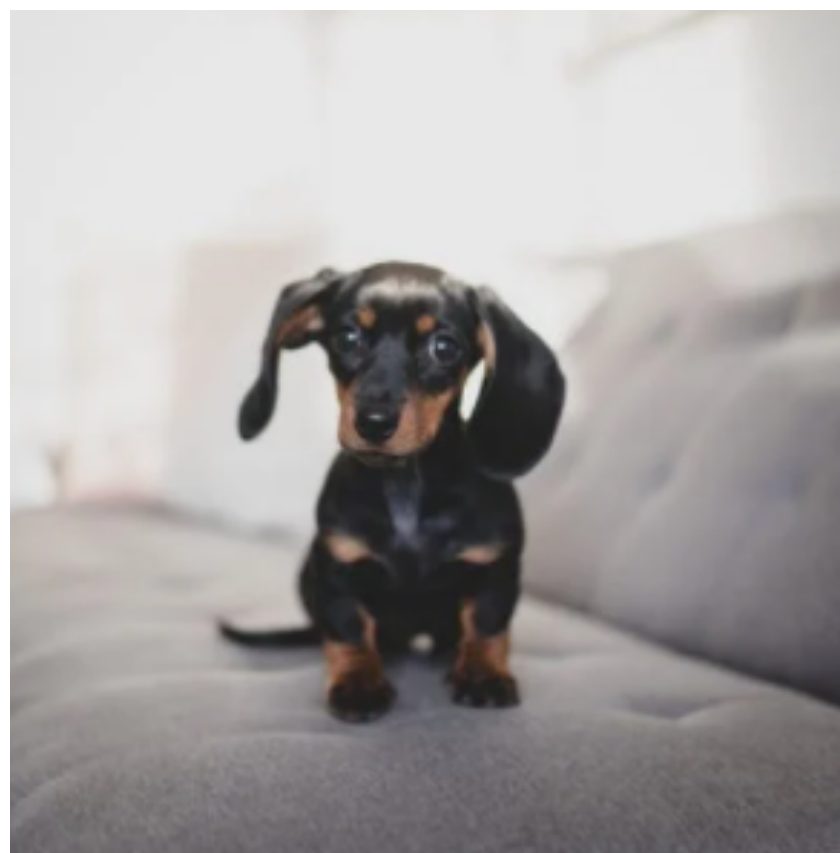
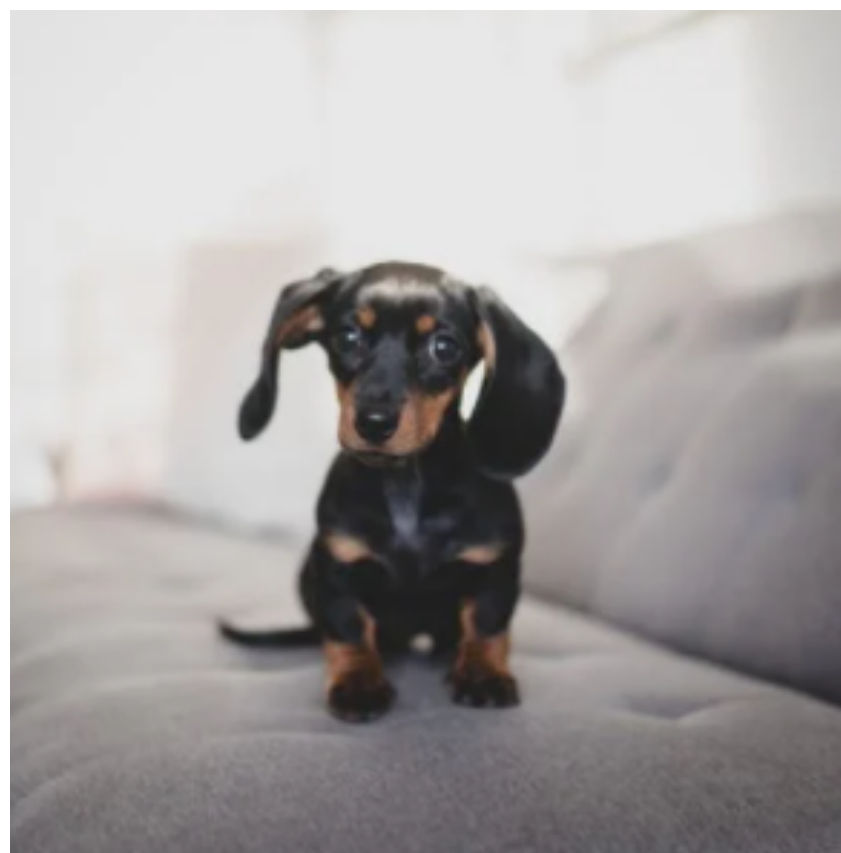


# Adaptive Discriminator Augmentation

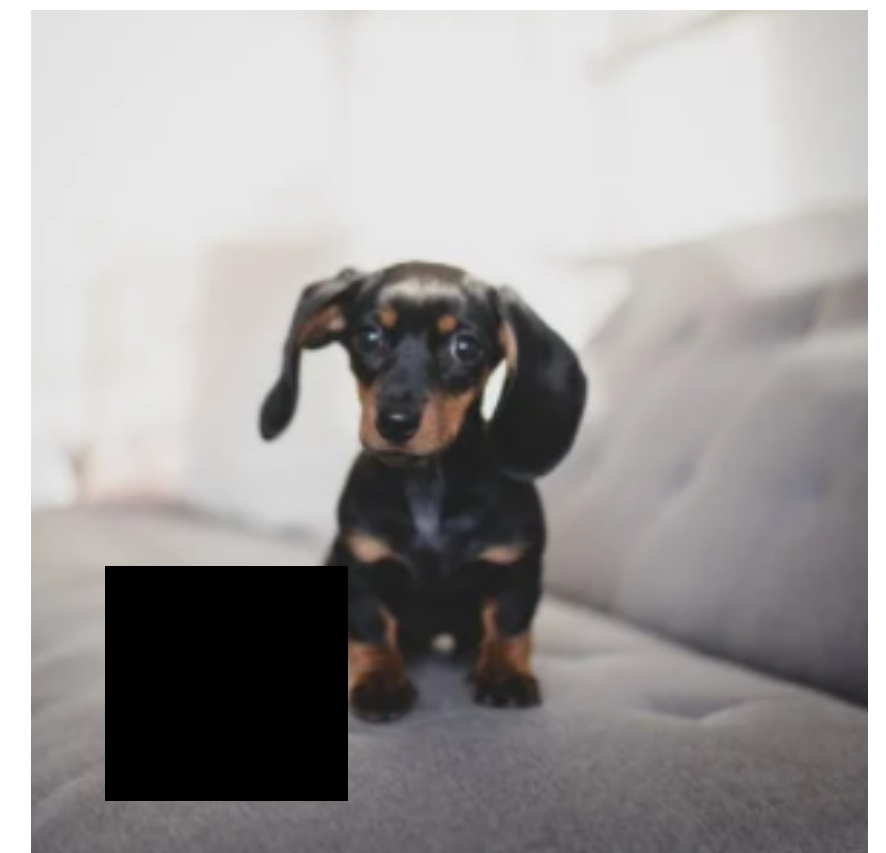
## Invertible Transformations that don't leak

Data Augmentation 방법

2) invertible transformations -> rotated, blue colored 된 data 가 적게 생산됨 !



...



only 0.1 probability



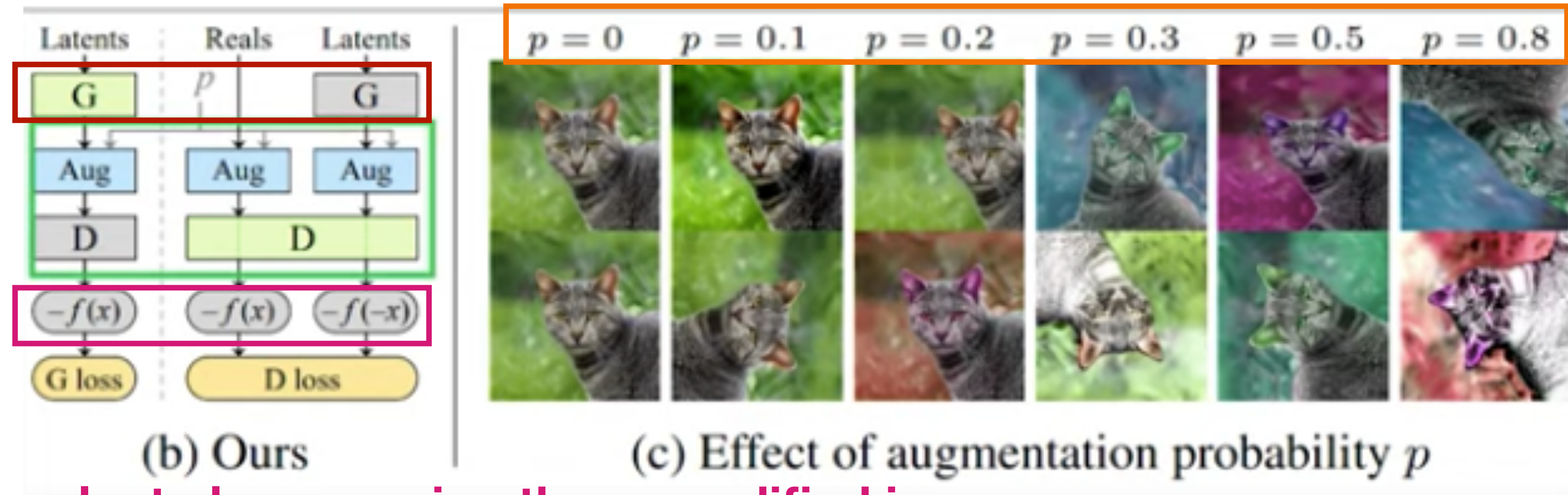
# Adaptive Discriminator Augmentation

Data Augmentation 방법

## ADA

Discriminator 은 **Augmented** 된 이미지를 받음

어떻게 Augmented 되는지 각 magnitude 별로 실험을 함 !



Generators are guided to generate  
Only clean images

evaluate losses using these modified images

# Adaptive Discriminator Augmentation

## ADA

Data Augmentation 방법

4) *before* ADA

=> the discriminator works only if each transformation's occurrence probability is below 80 %

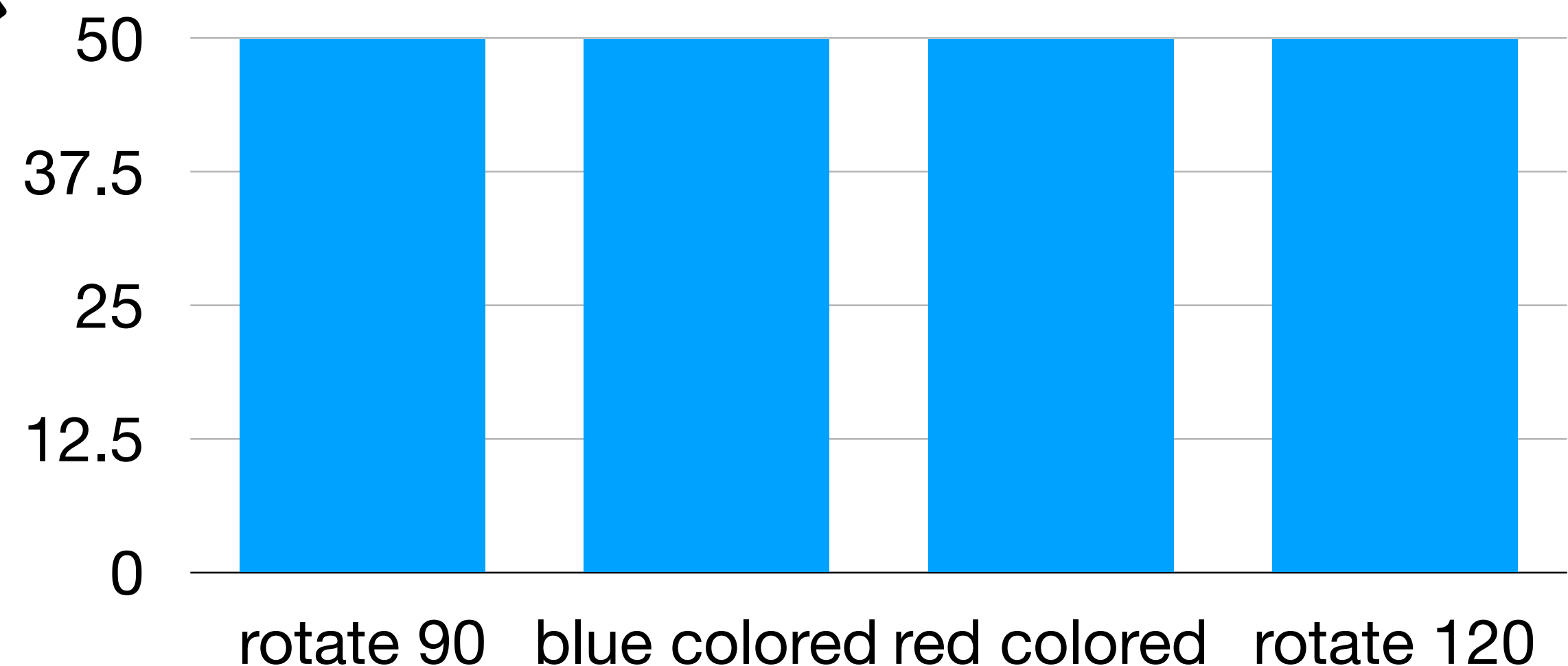
But overfitting still happened



(c) Effect of augmentation probability  $p$



ex. Augmented 기법별 적용될 확률





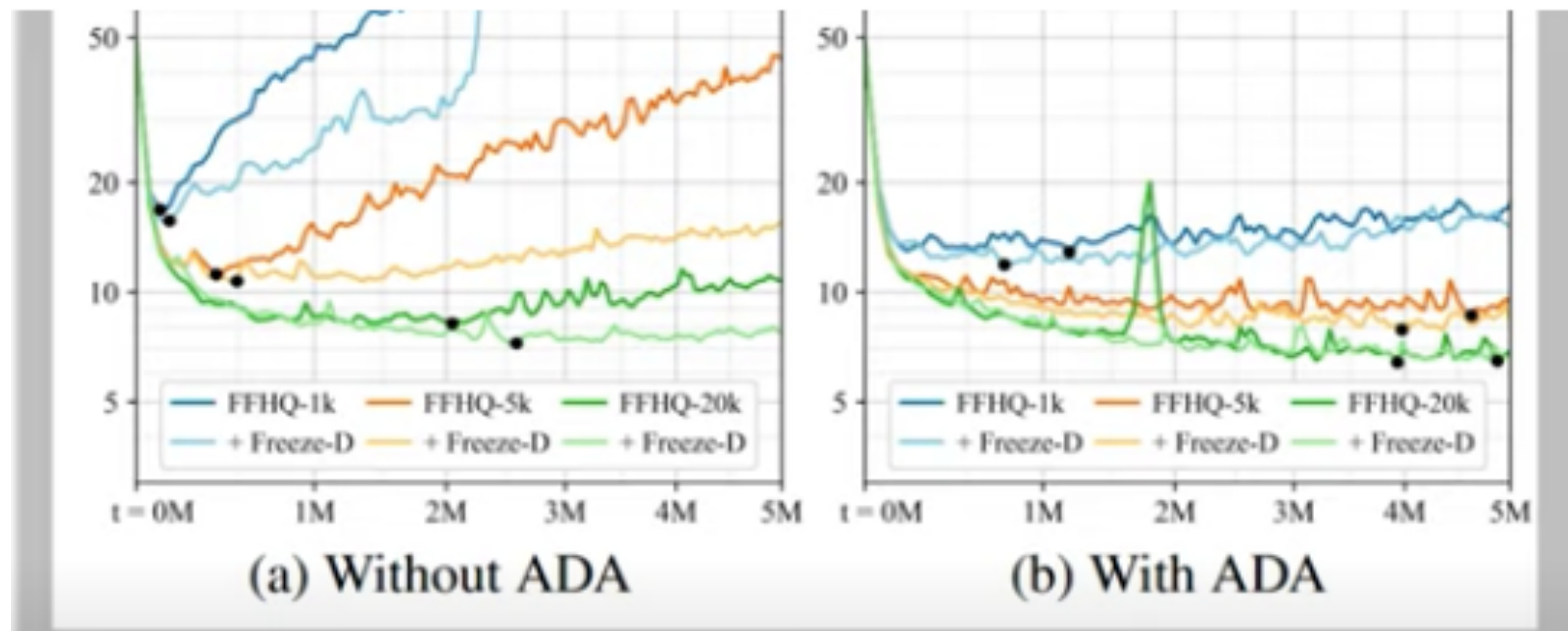
# Adaptive Discriminator Augmentation

## ADA

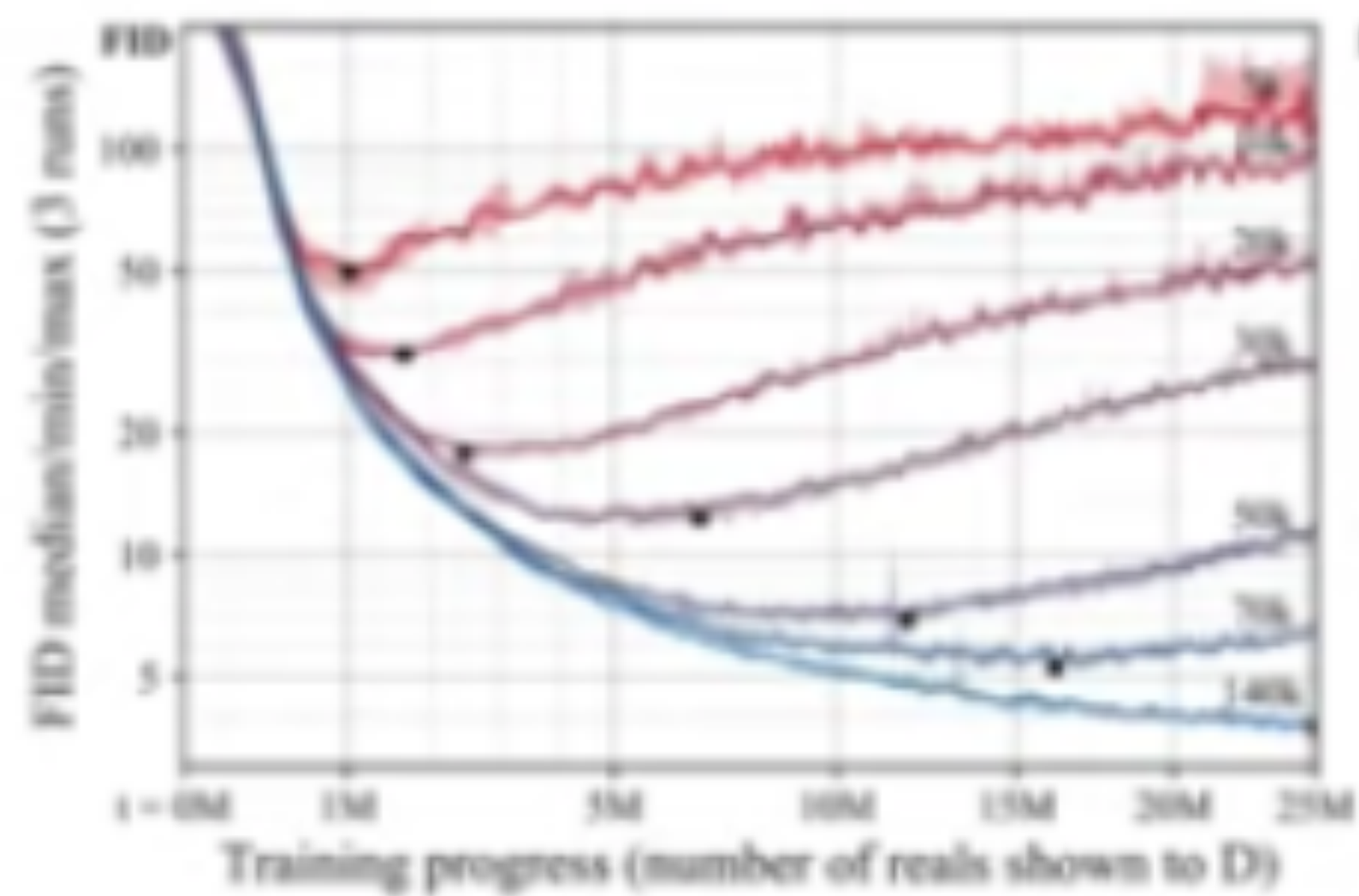
Data Augmentation 방법

## ADA

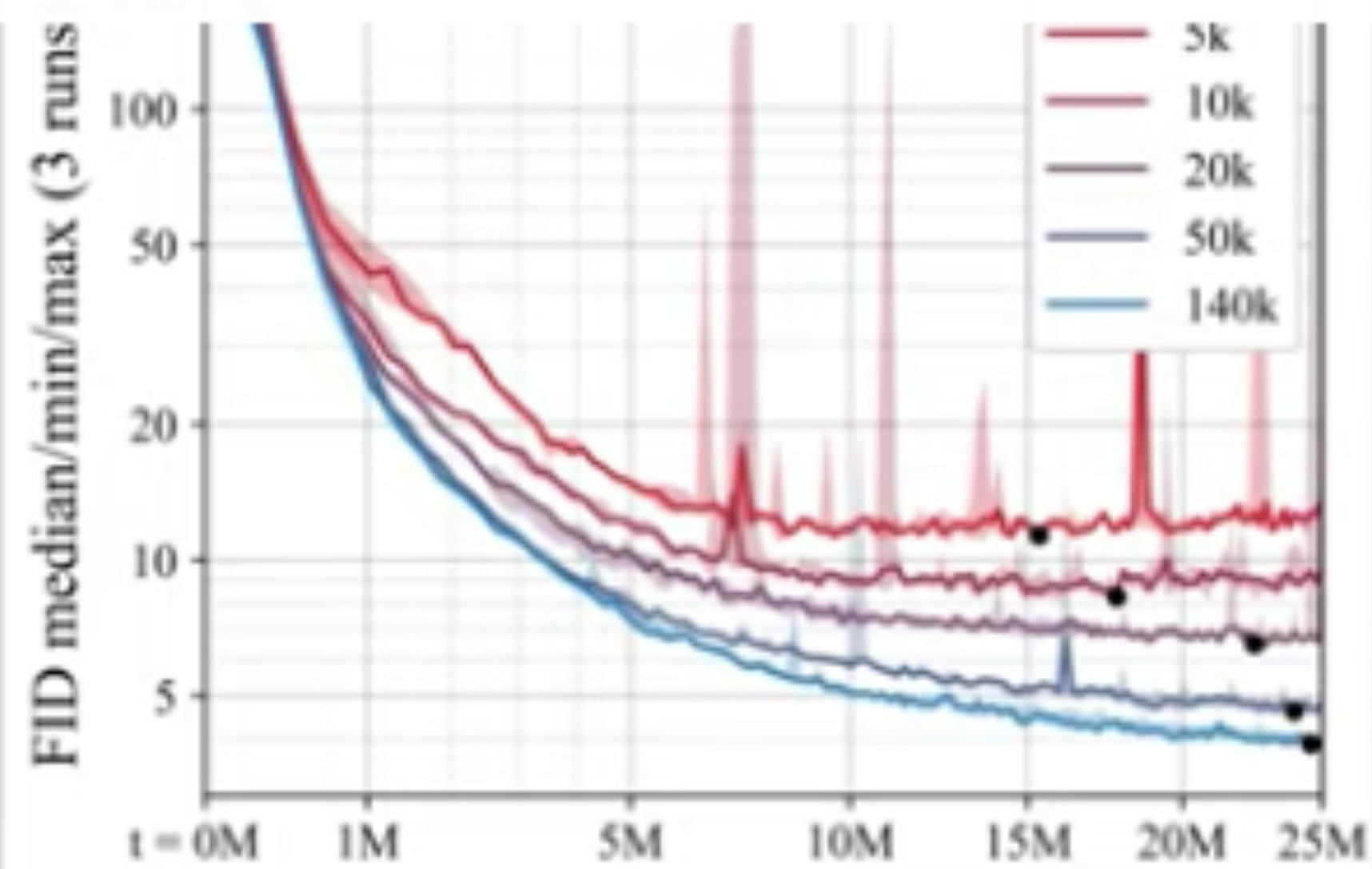
: instead of having another hyper parameter to decide the ideal augmentation probability of appearance, they instead control the augmentation strength during training



Starting at 0, and then adjust its value iteratively based on the difference between the training and validation sets



(a) Convergence of FFHQ ( $256 \times 256$ )



(a) With adaptive augmentation

