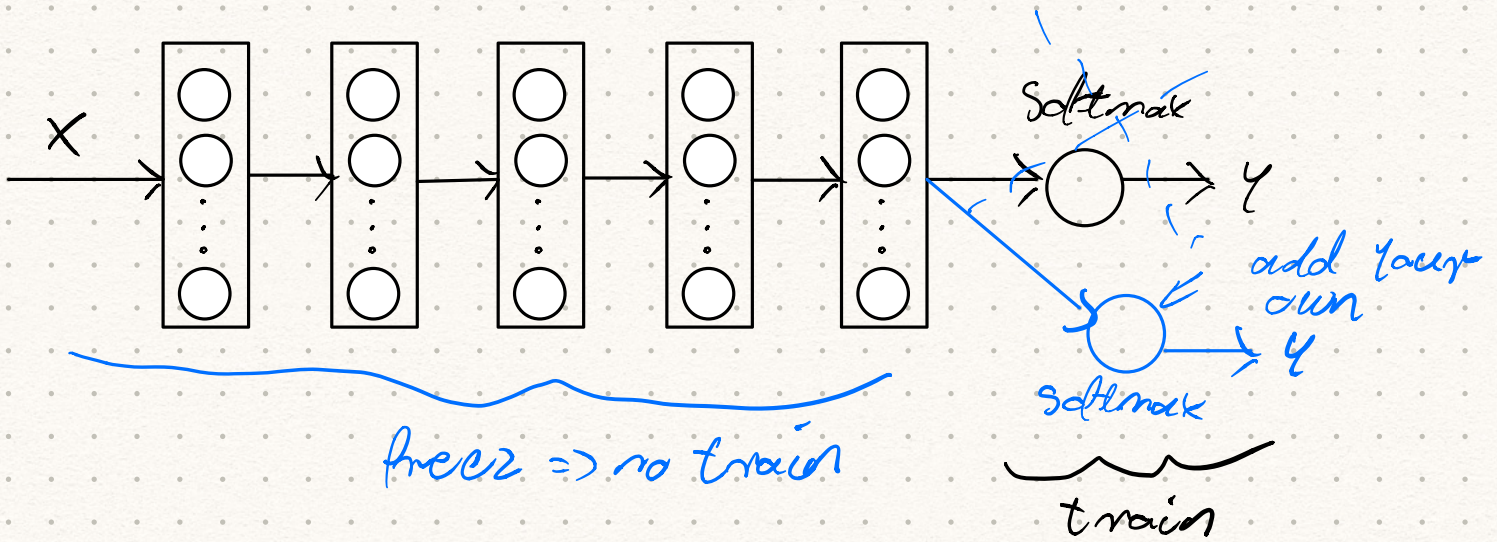
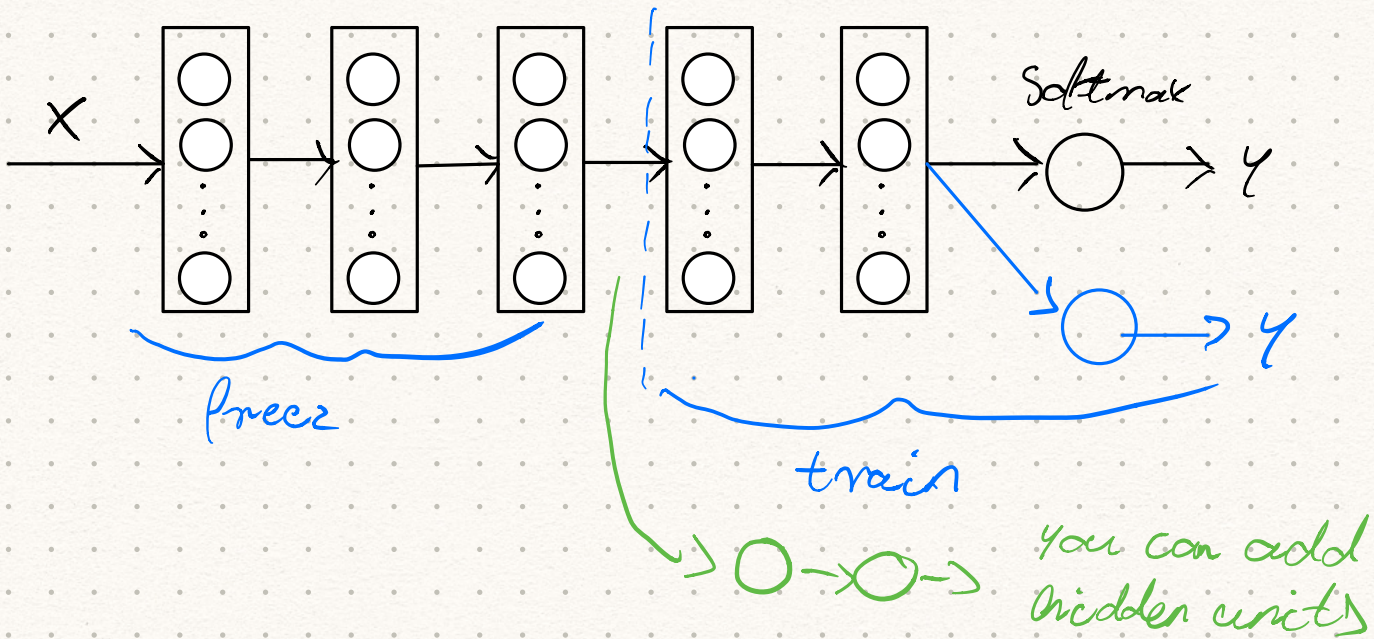


# Transfer learning

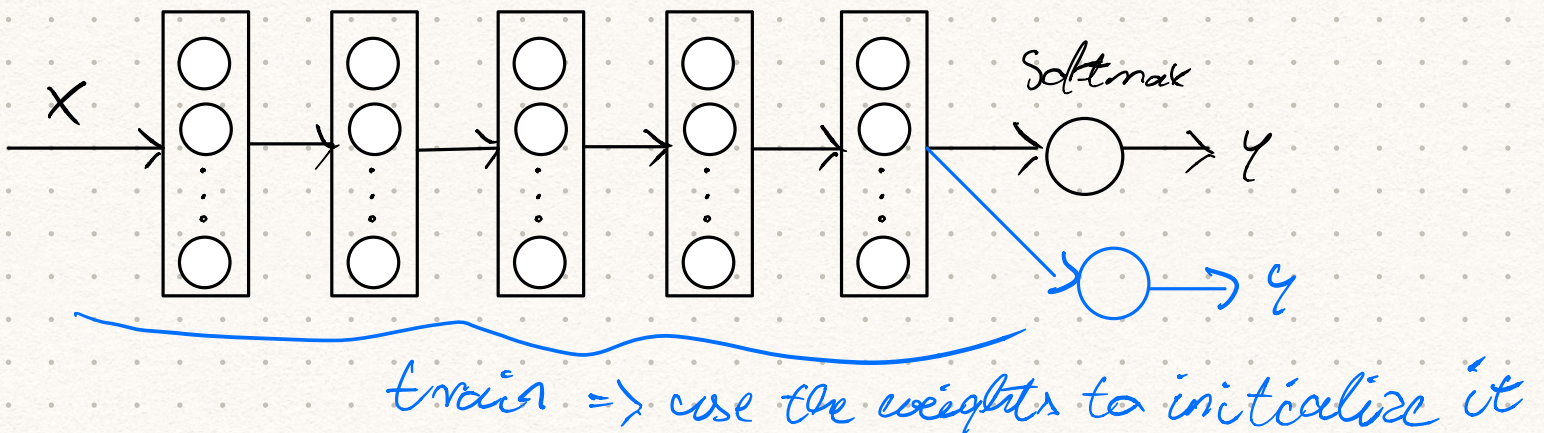
• small training data:



• larger training data

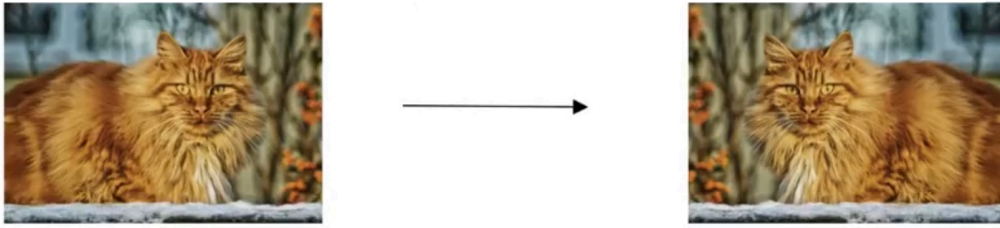


• large training data

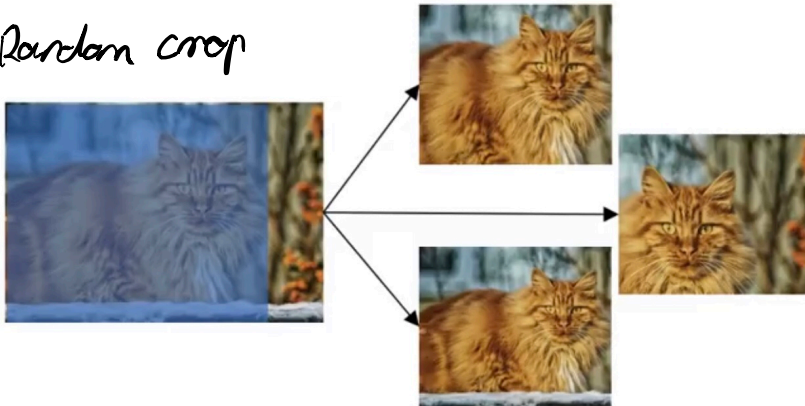


# Data augmentation

## • Mirroring





## • Random crop



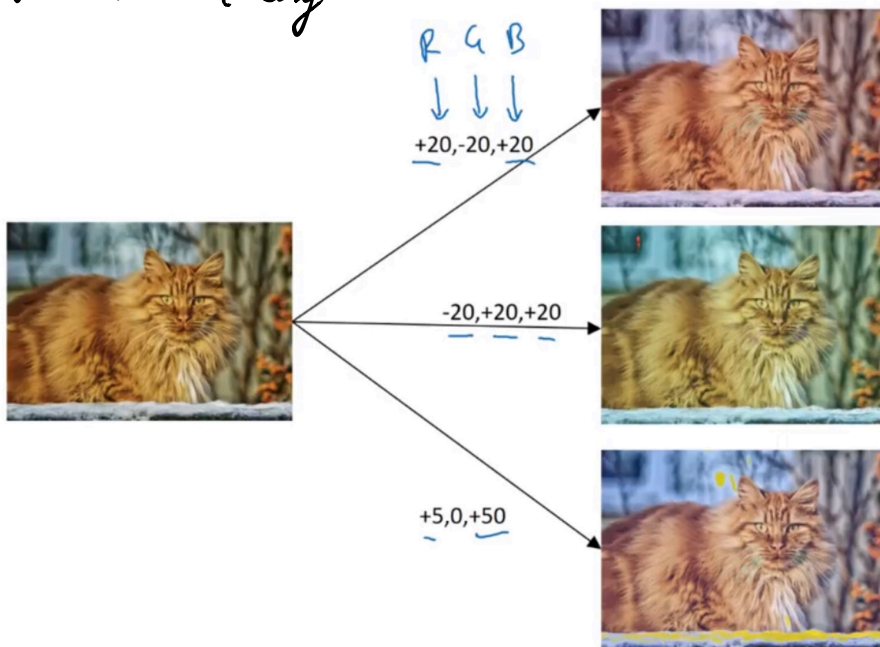
(crop large subset)

Andrew Ng

• Rotation  $\Rightarrow$    $\Rightarrow$   ...

• Shearing  $\Rightarrow$    $\Rightarrow$  

## • Color shifting



Andrew Ng

To handle illumination changes  $\Rightarrow$  augment the colors