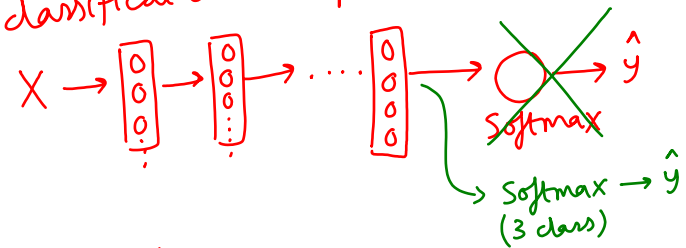
Transfer learning

- Task: Build a cat detector to detect your own cat
- Tigger, Misty, Neither - 3 class classification
- You can download an Image Net classification CNN module from github for 1000 class Image classification & Replace the last layer w/ your own classification logic



① Freeze params associated w/ (n-1) layers & train params w/ softmax layer only — we get the params from their pretrained model itself.

- Why use their params?
  Because they have trained their model on the same problem (Image classification) - Maybe they were not exactly classifying cats (but other types of Animals)
- But every Animal has an eye/nose/mouth etc.
  ⇒ You can leverage the model trained to identify those features in YOUR classifier, even if you dont have much data!

② What if you had a large DNN with 20 layers?
Then you may actually want to train a few of the layers and not leave all N-1 layers constant!
∴ Freeze the first 15 layers
train the last 5 layers w/ your data
& ofcourse train the last softmax layer

③ In general, if you have more data,
layers you leave frozen ↓
as you can actually train the model on your specific data.


Done!