Learning from
multiple tasks

Transfer learning

deeplearning.ai

Transfer learning

image recognition (x, y) pre-training

$\rightarrow (x, y)$ — fine-tuning

radiology image   diagnoses

x

$\hat{y}$

$w^{[L]}, b^{[L]}$

image recognition
$\rightarrow \boxed{1,000,000}$ $\boxed{100} \leftarrow$

radiology diagnosis
$\rightarrow \boxed{100}$ $\boxed{1000}$

x
audio

$\hat{y}$

Speech recognition
10h   10,000h

wakeword / trigger word
detection   1h
50h

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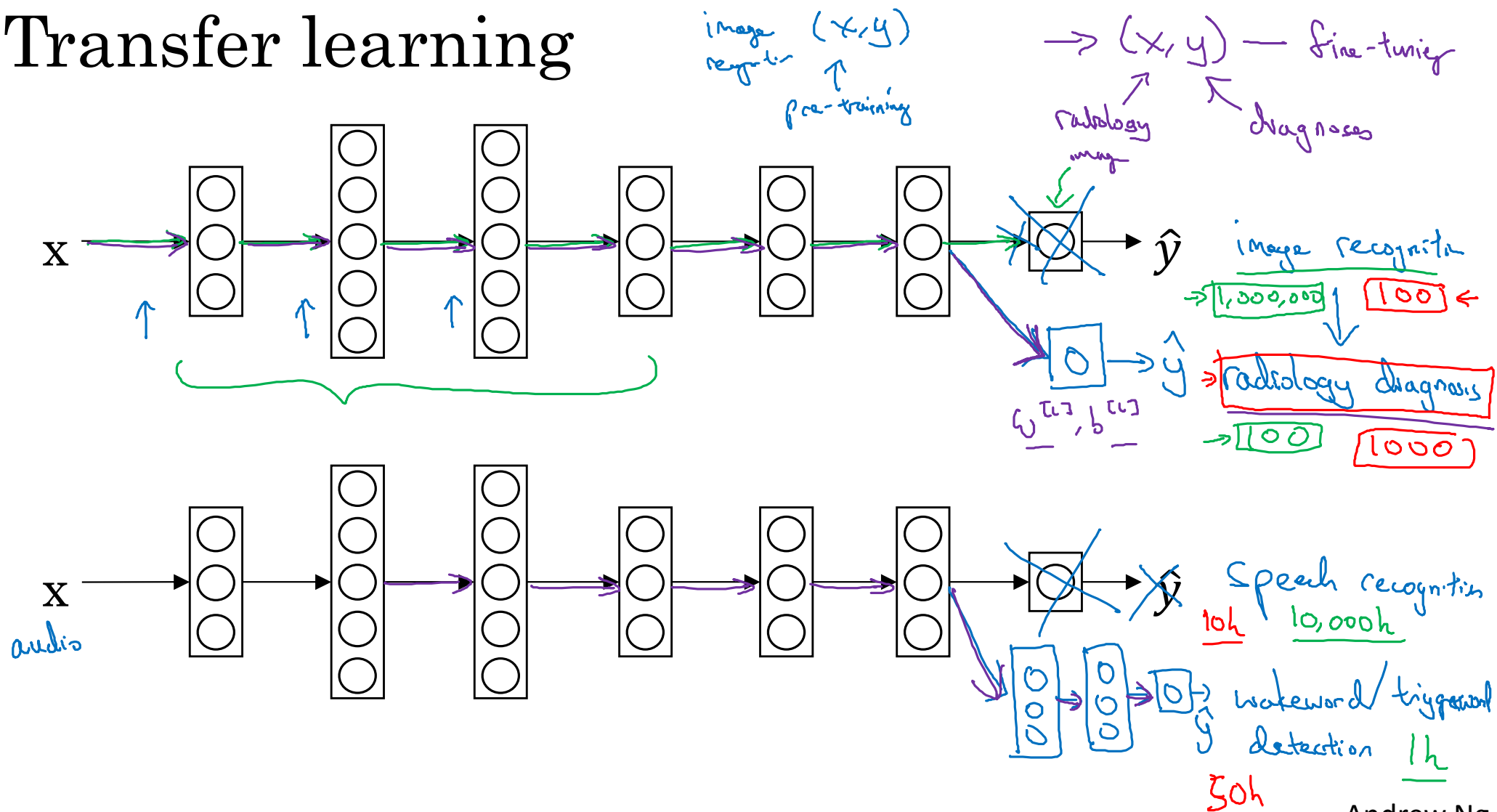
When transfer learning makes sense

Transfer from A → B

- Task A and B have the same input x.

- You have a lot more data for Task A than Task B.

- Low level features from A could be helpful for learning B.