deeplearning.ai

Learning from
multiple tasks

Transfer learning

Transfer learning

image (x, y)
recognition

↑
pre-training

(x, y) — fine-tuning

radiology   ↑ diagnosis
image

image recognition
→ 1,000,000   100

$W^{[4]}, b^{[4]}$

radiology diagnosis
→ 100   1000

Speech recognition
10,000h   10h

wakeword / trigger
detection
1h   50h

x

x

audio

$\hat{y}$

$\hat{y}$

Andrew Ng
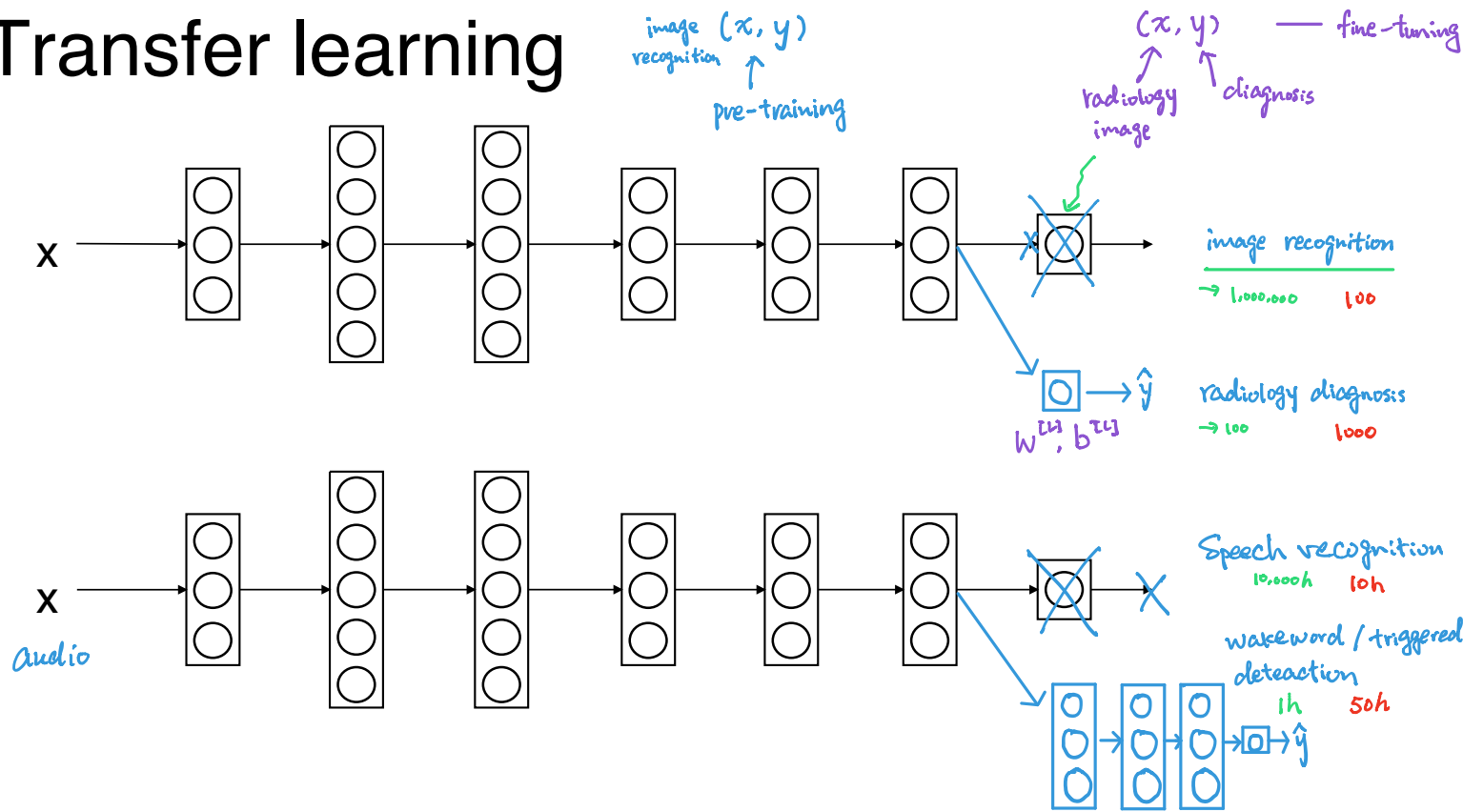
When transfer learning makes sense

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.