

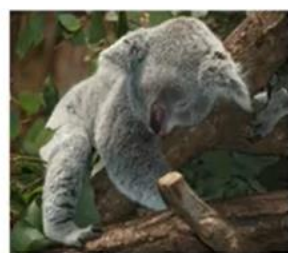


deeplearning.ai

Multi-class classification

Softmax regression

Recognizing cats, dogs, and baby chicks, *other*



3

1

2

0

3

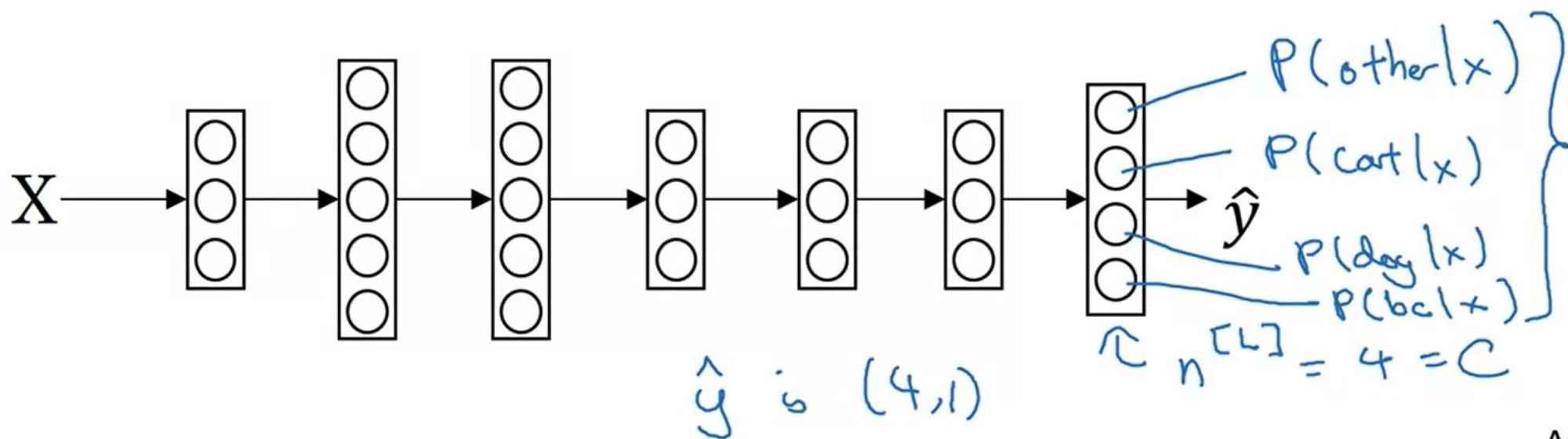
2

0

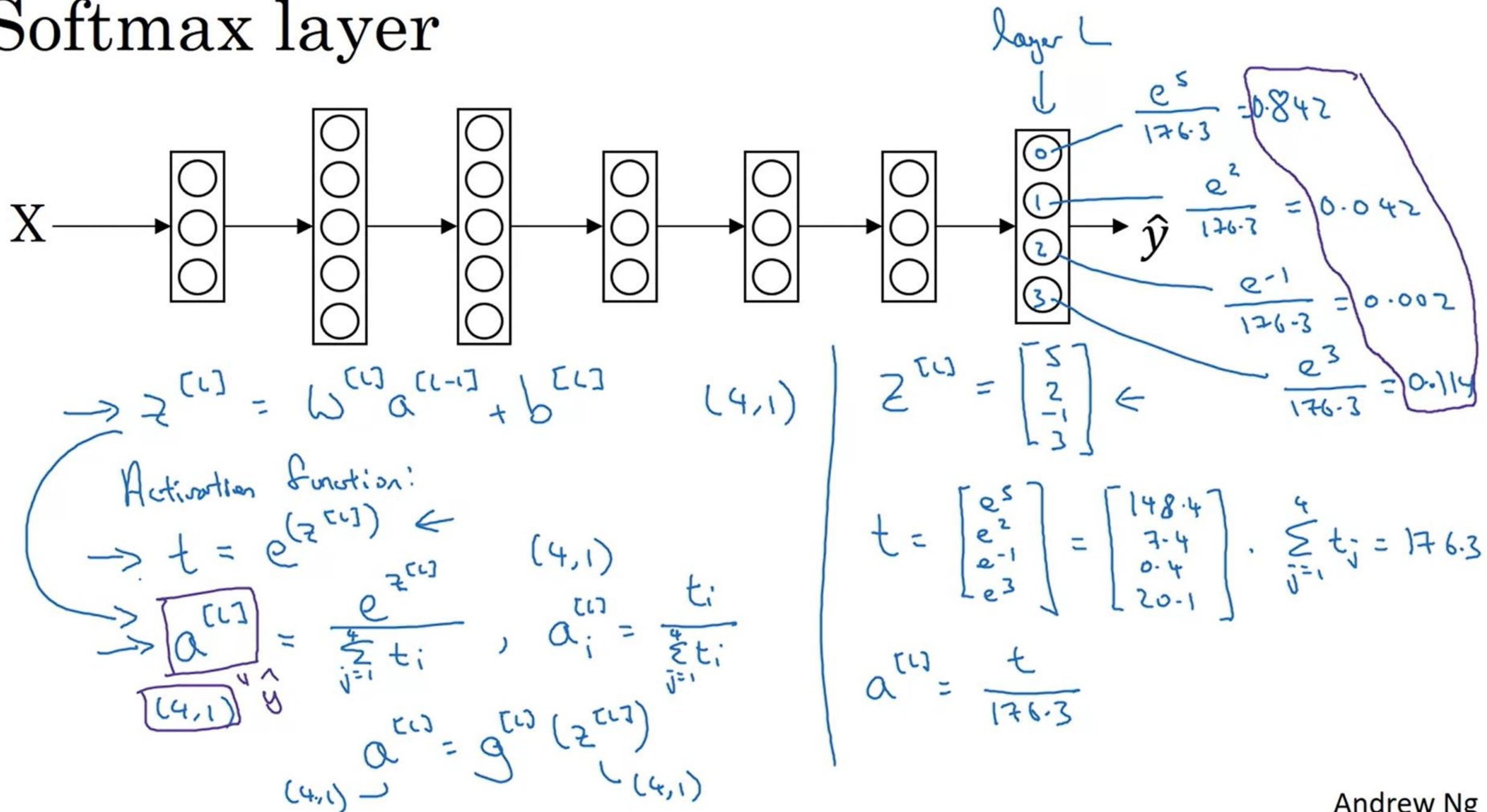
1

$C = \text{\#classes} = 4$

$(0, \dots, 3)$



Softmax layer



Softmax examples

$$\begin{aligned}
 & \begin{matrix} x_1 \\ x_2 \end{matrix} \rightarrow \begin{bmatrix} \cdot \\ \cdot \\ \cdot \end{bmatrix} \rightarrow \hat{y} \\
 & x \rightarrow \begin{bmatrix} \cdot \\ \cdot \\ \cdot \end{bmatrix} \rightarrow \begin{bmatrix} \cdot \\ \cdot \\ \cdot \end{bmatrix} \rightarrow \dots \rightarrow \begin{bmatrix} \cdot \\ \cdot \\ \cdot \end{bmatrix} \\
 & z^{(1)} = \omega^{(1)} x + b^{(1)} \\
 & a^{(1)} = \hat{y} = g(z^{(1)})
 \end{aligned}$$

