



deeplearning.ai

Recurrent Neural Networks

Notation

Motivating example

NLP

x: Harry Potter and Hermione Granger invented a new spell.

$\rightarrow \underline{x^{(1)}} \quad x^{(2)} \quad x^{(3)} \quad \dots \quad x^{(t)} \quad \dots \quad x^{(9)}$

$$T_x = 9$$

$\rightarrow y:$

$y^{(1)} \quad y^{(2)} \quad 0 \quad 1 \quad 1 \quad 0 \quad 0 \quad 0 \quad 0$
 $y^{(3)} \quad \dots \quad y^{(9)}$

$$T_y = 9$$

$x^{(i)(t)}$

$$T_x^{(i)} = 9$$

15

$y^{(i)(t)}$
 \uparrow

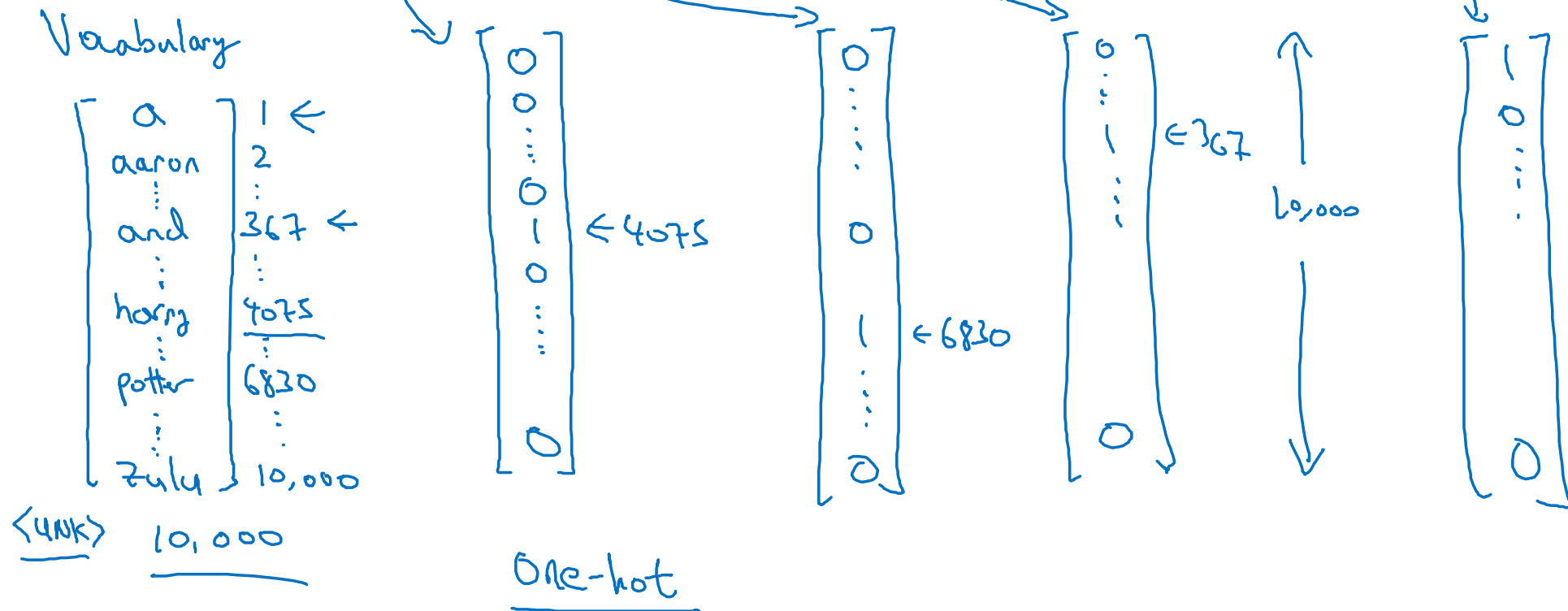
$$T_y^{(i)}$$

Representing words

$$x^{<t>} \rightarrow y^{<t>} \quad (x, y)$$

x: Harry Potter and Hermione Granger invented a new spell.

$x^{<1>}$ $x^{<2>}$ $x^{<3>}$... $x^{<9>}$



Representing words

x: Harry Potter and Hermione Granger invented a new spell.

$x^{<1>}$ $x^{<2>}$ $x^{<3>}$ \dots $x^{<9>}$

And = 367

Invented = 4700

$$A = 1$$

New = 5976

Spell = 8376

Harry = 4075

Potter = 6830

Hermione = 4200

Gran... = 4000