



deeplearning.ai

End-to-end deep
learning

Whether to use
end-to-end learning

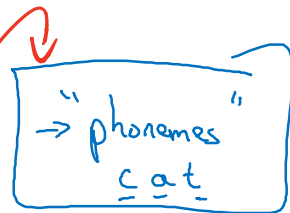
Pros and cons of end-to-end deep learning

Pros:

- Let the data speak

(rather than being forced to reflect human preconceptions)

$x \rightarrow y$

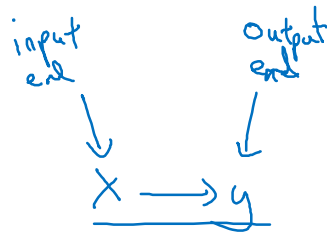


- Less hand-designing of components needed

Cons:

$x \text{ --- } y$

- May need large amount of data



(x, y)

- Excludes potentially useful hand-designed components

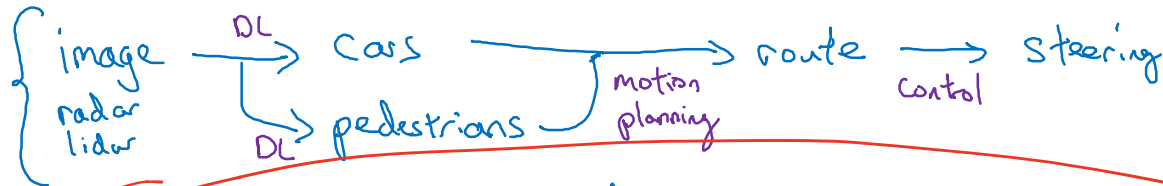
Data.

Hand-design.

Applying end-to-end deep learning

Key question: Do you have sufficient data to learn a function of the complexity needed to map x to y ?

$x \rightarrow y$



- Use DL to learn individual components
- Carefully choose $x \rightarrow y$ depending what tasks you can get data for.

