



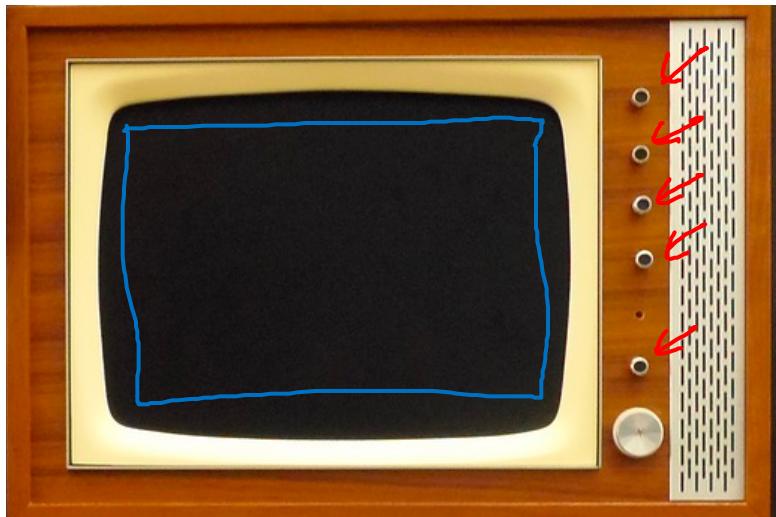
deeplearning.ai

# Introduction to ML strategy

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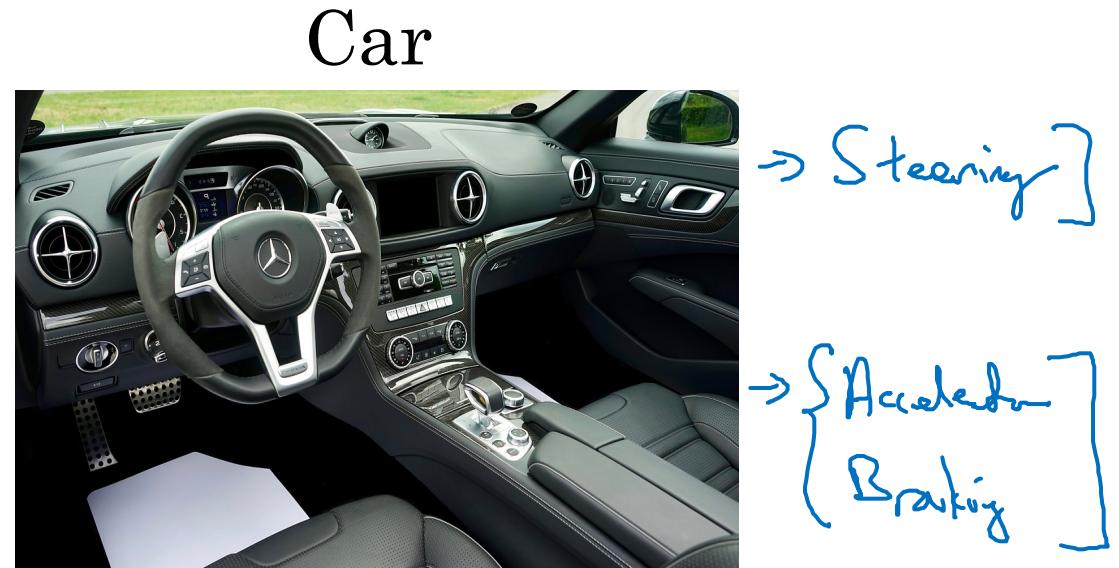
## Orthogonalization

# TV tuning example



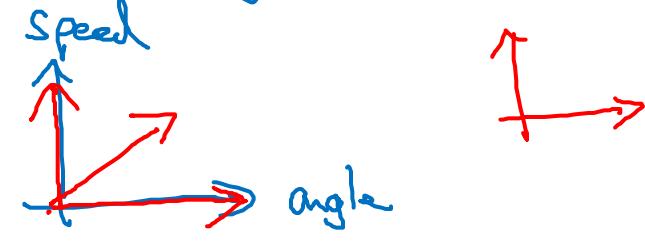
Orthogonalization

$$\begin{aligned}
 & 0.1 \times \begin{array}{c} \uparrow \\ \downarrow \end{array} \\
 + & 0.3 \times \begin{array}{c} \leftarrow \\ \rightarrow \end{array} \\
 - & 1.7 \times \begin{array}{c} \diagdown \\ \diagup \end{array} \\
 + & 0.8 \times \begin{array}{c} \leftarrow \\ \rightarrow \end{array} \\
 + \dots & \begin{array}{c} \diagdown \\ \diagup \end{array}
 \end{aligned}$$



$$\rightarrow \underline{0.3 \times \text{angle}} - 0.8 \times \text{speed}$$

$$\rightarrow 2 \times \text{angle} + 0.9 \times \text{speed}.$$

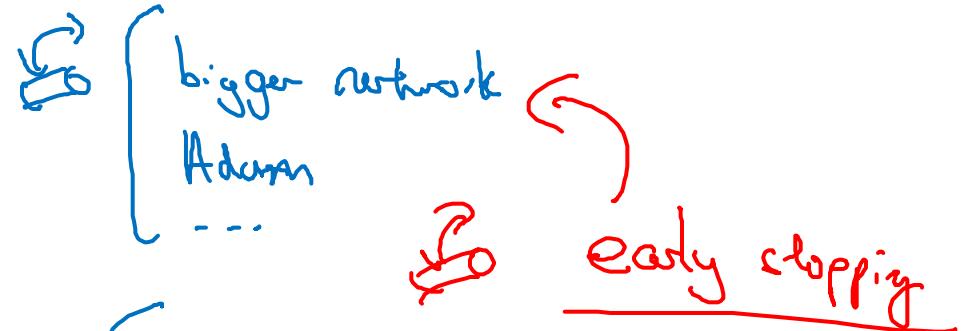


# Chain of assumptions in ML

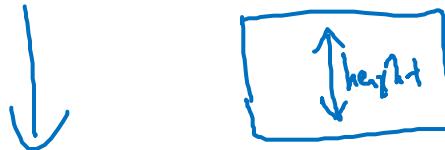
→ Fit training set well on cost function



(≈ human-level performance)



→ Fit dev set well on cost function



Regularization  
Bigger training set

→ Fit test set well on cost function

Bigger dev set

→ Performs well in real world

(Happy cat pic off users.)

Change dev set or  
cost function