deeplearning.ai

Introduction to ML strategy

Why ML Strategy?

Motivating example






90%

Ideas:

- Collect more data
- Collect more diverse training set
- Train algorithm longer with gradient descent
- Try Adam instead of gradient descent
- Try bigger network
- Try smaller network
- Try dropout
- Add L_2 regularization
- Network architecture
  - Activation functions
  - # hidden units
  - …

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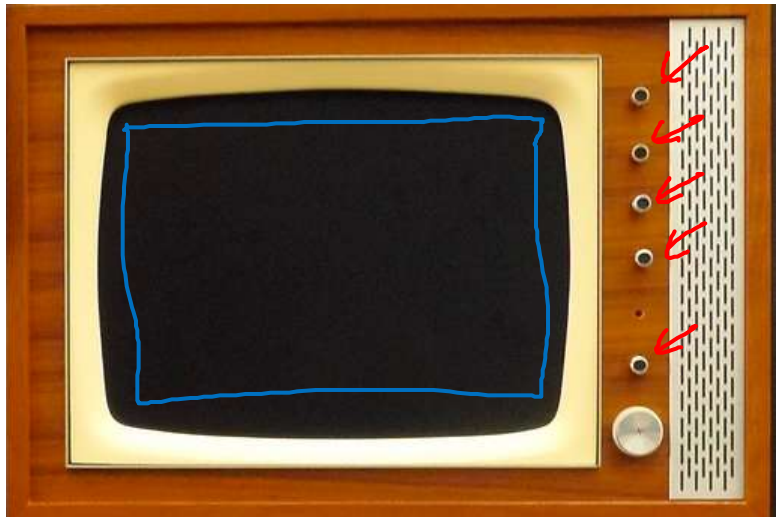
Introduction to ML strategy

Orthogonalization

TV tuning example



Orthogonalization

0.1 x

+ 0.3 x

- 1.7 x

+ 0.8 x

+ ...

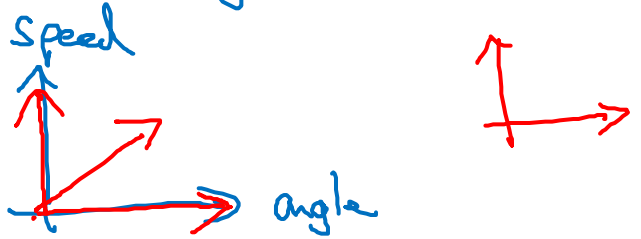
Car

→ Steering

→ {Acceleration, Braking}

→ 0.3 x angle − 0.8 speed

→ 2 x angle + 0.9 speed.



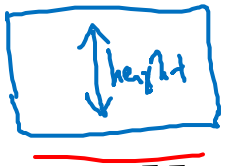
Chain of assumptions in ML

→ Fit training set well on cost function

(≈ human-level performance)

- Bigger network
- Adam
- ...

→ Fit dev set well on cost function



- Regularization
- Bigger training set

early stopping

→ Fit test set well on cost function

Bigger dev set

→ Performs well in real world

(Happy cat pic app users.)

Change dev set or cost function