Intro to ML Strategy

Tuesday, June 5, 2018 2:51 PM

intro1

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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This course: Quick and effective way to figure out what type of improvement will work.. Strategy to search for it.

intro2

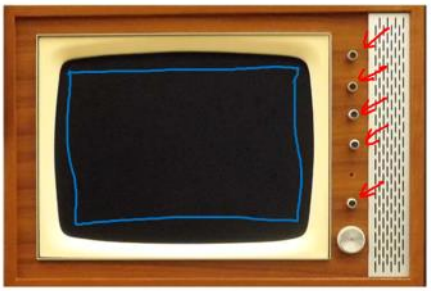
deeplearning.ai

Introduction to ML strategy

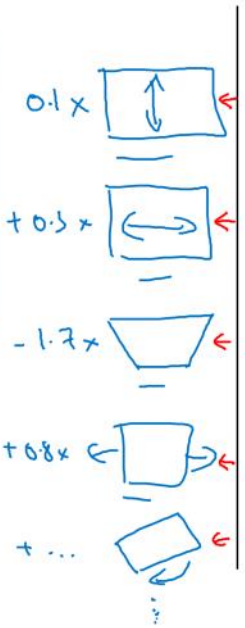
Orthogonalization

What to tune --> what to get: this process is called orthoganization

TV tuning example



Orthogonalization



Each knob does ONE thing -- then it makes sense.
听起来像是把大任务分拆成小任务吧...

Car

→ Steering

→ {Acceleration, Braking}

→ 0.3 x angle − 0.8 speed

→ 2 x angle + 0.9 speed.

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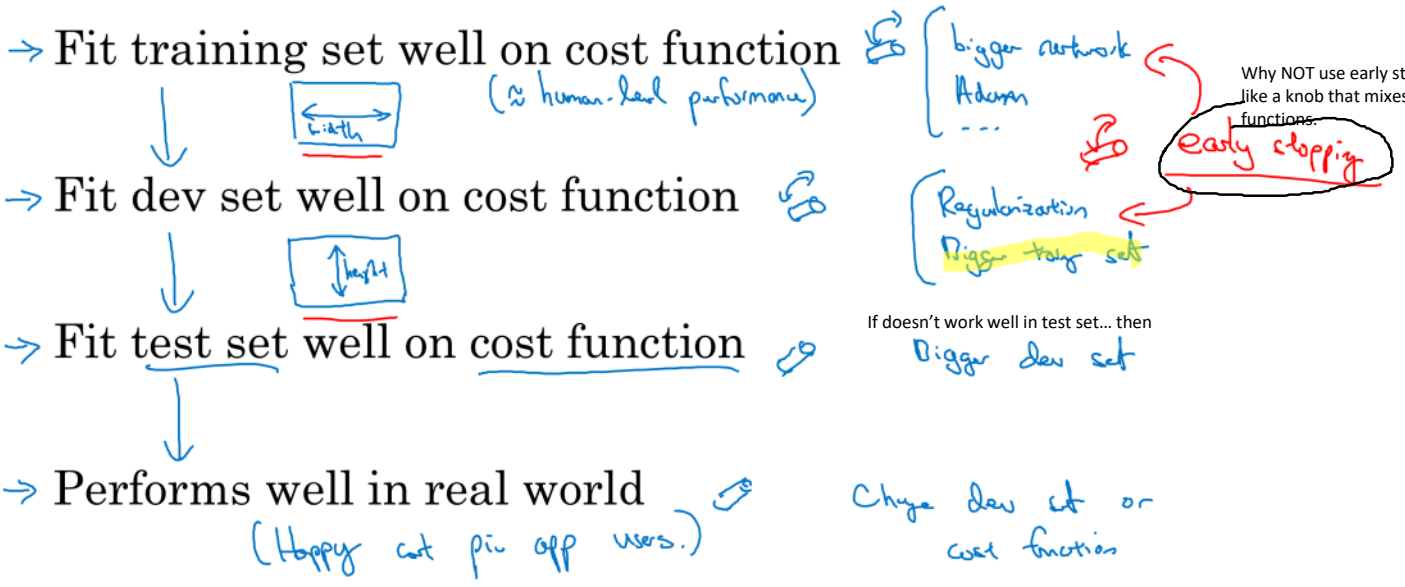
One control for steering (direction); one for speed --> at the end of the day you care about both direction and speed. Orghogonal control: speed and angle

Chain of assumptions in ML



What to do for the course: Figure out the bottleneck of your performance.