deeplearning.ai

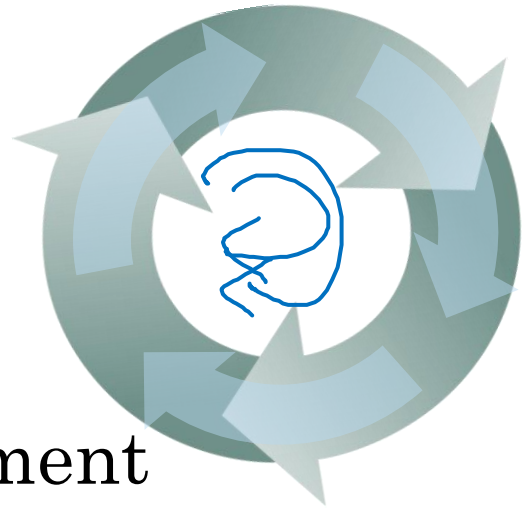
Setting up your goal

Single number evaluation metric

You'll find your progress will be much faster if you have a single real number evaluation metric that lets you quickly tell if the new thing you just tried is working better or worse than your last idea.

Using a single number evaluation metric

empirical process



Of examples recognized as cat, what % actually are cats?

What % of actual cats are correctly recognized

It turns out that there's often a trade off between precision and recall.

Classifier	Precision	Recall	F1 Score
A	95%	90%	92.4%
B	98%	85%	91.0%

F1 score = "Average" of P and R.

$\left(\frac{2}{\frac{1}{P}+\frac{1}{R}}\right)$ "Harmonic mean"

Harmonic mean

And it has some advantages in terms of trading off precision and recall.

Dev set + Single number evaluation metric

real

Speed up iterating

Andrew Ng

Another example

Algorithm	US	China	India	Other	Average
A	3%	7%	5%	9%	6%
B	5%	6%	5%	10%	6.5%
C	2%	3%	4%	5%	3.5%
D	5%	8%	7%	2%	5.25%
E	4%	5%	2%	4%	3.75%
F	7%	11%	8%	12%	9.5%

Error