Setting up your goal

Satisficing and optimizing metrics

It's not always easy to combine all the things you care about into a single real number evaluation metric. In this case, I found it's sometimes useful to set up satisfying as well as optimizing metrics.

Another cat classification example

optimizing   Satisficing

Classifier	Accuracy	Running time
A	90%	80ms
B	92%	95ms
C	95%	1,500ms

$$\text{Cost} = \text{accuracy} - 0.5 \times \text{running Time}$$

Maximize accuracy

subject to running Time $\leq 100\,ms$. threshold

N metrics : 1 optimizing

N-1 satisficing

Wakewords / Trigger words

Alexa, OK Google,

Hey Siri, nihaobaidu

你好百度

accuracy.

#false positive

Maximize accuracy.

s.t. ≤ 1 false positive

every 24 hours.

These metrics must be evaluated or calculated on a training set or a development set or maybe on the test set.

Andrew Ng