Cat dataset examples

Metric + Dev : Prefer A

You/users : Prefer B.

$\rightarrow$ Metric: classification error

Algorithm A: 3% error $\longrightarrow$ pornographic

✓ Algorithm B: 5% error

$$\text{Error}: \frac{1}{\sum w^{(i)}} \quad \cancel{\frac{1}{M_{dev}}} \quad \sum_{i=1}^{M_{dev}} w^{(i)} \, I\{ y_{pred}^{(i)} \neq y^{(i)} \}$$

$\hookrightarrow$ predicted value (0/1)

$$\rightarrow w^{(i)} = \begin{cases} 1 & \text{if } x^{(i)} \text{ is non-porn} \\ 10 & \text{if } x^{(i)} \text{ is porn} \end{cases}$$

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Orthogonalization for cat pictures: anti-porn

1. So far we've only discussed how to define a metric to evaluate classifiers. ← *Place target*

2. Worry separately about how to do well on this metric.

Aim (shoot at target

$$J = \frac{1}{m} \sum_{i=1}^{m} \omega^{(i)} \mathcal{L}\left(\hat{y}^{(i)}, y^{(i)}\right)$$

$\Sigma \omega^{(i)}$

Another example

Algorithm A: 3% error

✓ Algorithm B: 5% error ⟵

→ Dev/test   ↙   → User images   ↙

If doing well on your metric + dev/test set does not correspond to doing well on your application, change your metric and/or dev/test set.

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