

Information Gain

$$\text{information gain} = \text{entropy (parent)} - \left[\text{weighted average} \right] \text{entropy (children)}$$

grade	bumpiness	speed limit	speed
steep	bumpy	yes	slow
steep	smooth	yes	slow
flat	bumpy	no	fast
steep	smooth	no	fast

entropy of parent = 1.0

$$\text{entropy} = \sum_i -P_i \log_2 P_i$$

information gain