

Mutual Information $I(X;Y)$ for Syntagmatic Relation Mining

Mutual Information: $I(X; Y) = H(X) - H(X|Y) = H(Y) - H(Y|X)$

Whenever “**eats**” occurs, what **other words** also tend to occur?

Which **words** have high mutual information with “**eats**”?

$$I(X_{\text{eats}}; X_{\text{meats}}) = I(X_{\text{meats}}; X_{\text{eats}}) > I(X_{\text{eats}}; X_{\text{the}}) = I(X_{\text{the}}; X_{\text{eats}})$$

$$I(X_{\text{eats}}; X_{\text{eats}}) = H(X_{\text{eats}}) \geq I(X_{\text{eats}}; X_w)$$