

A Bayesian LDA-Based model for semi-supervised part-of-speech tagging

Kristina Toutanova and Mark Johnson

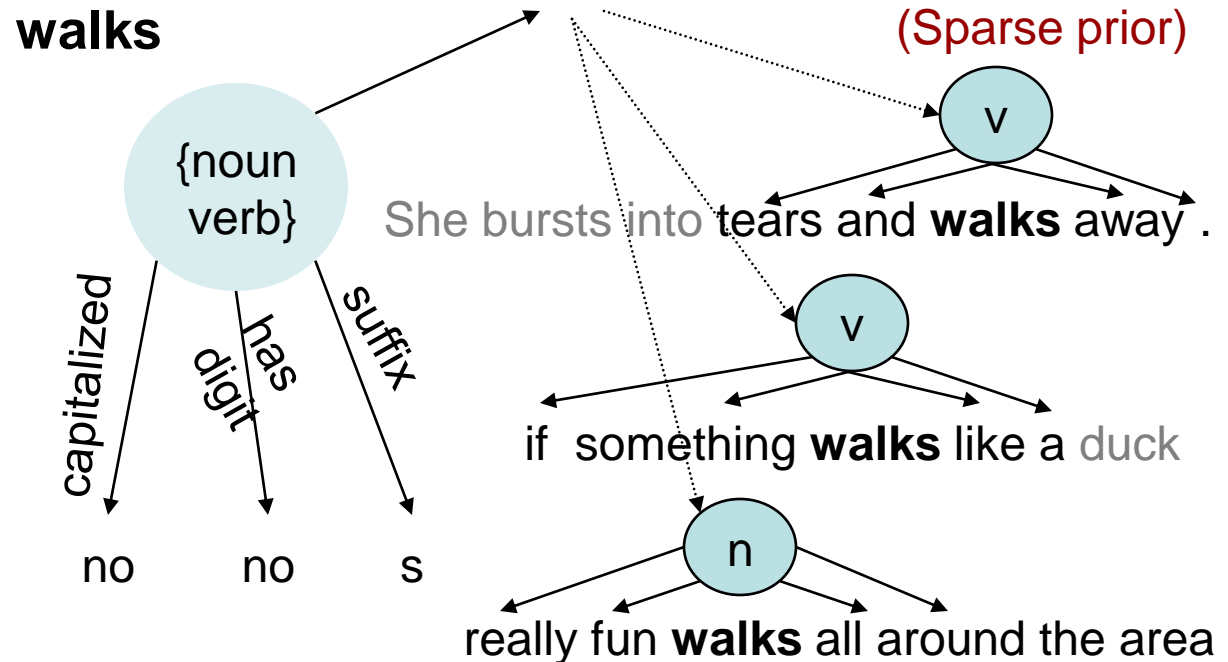
Bayesian generative model

Ambiguity Class Model + Context Model

$$P(t|walks, \{noun, verb\}) \sim \text{Dir}(\alpha, \alpha)$$

(Sparse prior)

walks



40 to 50% error reduction over the state of the art

Unlabeled data



Partial supervision



government : {noun}

benefit : {noun, verb}

last. {noun, verb, adverb, adjective}

net. {adjective, noun, verb}

at. {noun, prep., part.}