Maximum Entropy Markov Model

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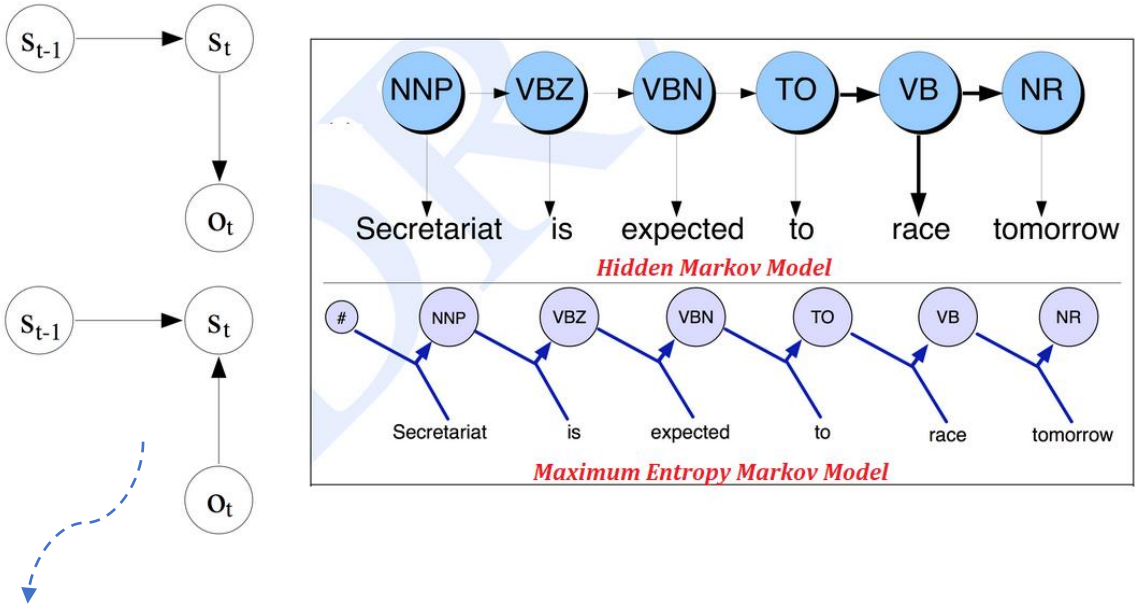
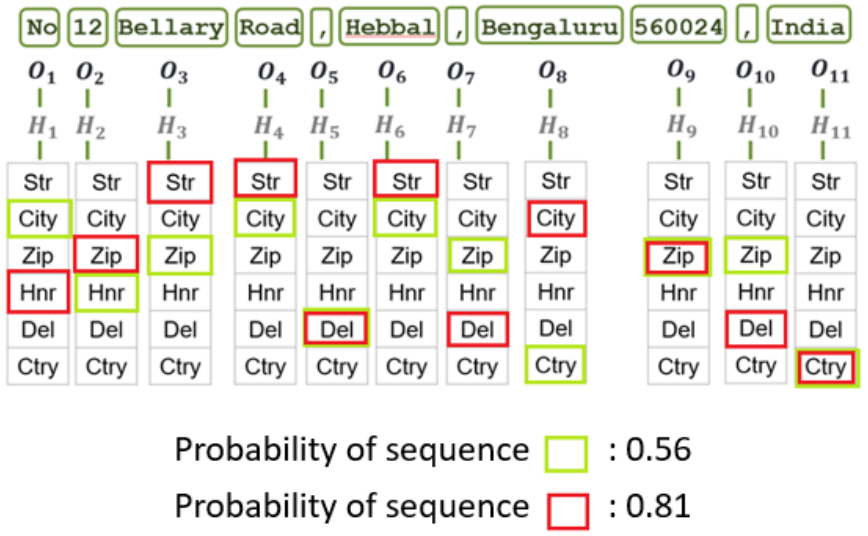
Maximum Entropy Markov Model (MEMM) for Sequence Labeling

- Probabilistic sequence labeling model with finite hidden states
- Prediction of hidden states (labels) in address type query
- Multinomial logistic regression for classification integrating features of observations (tokens)
- Encode the most likely state sequence using Viterbi algorithm (i.e. state sequence in max. a posteriori probability)



$$P(S_t \mid S_{t-1}, O_t) = \frac{1}{Z(O_t, S_{t-1})} exp(\sum_{i=1}^{N} w_i * f_i(O_{t,}, S_{t-1}))$$



Sequence Labeling using MEMM for Address type queries (training data : ~2 million Amazon delivery queries in India)