

Assignment 3A

Implemented Gibbs sampling over the markov network structure using all the four factors, got the mostProbableWord as maxOccurrences of characters in the samples (after burn-in)

It is then used to calculate the modelAccuracy.

Experiments:

Tree

Algorithm	Ch-Acc	Wd-Acc	LL	Time (seconds)
Gibbs	55.4959786	9.52380952	-7.4393137	5.7
Loopy Belief	66.219839142	10.714285714	-7.008777135	11.2

TreeWS

Algorithm	Ch-Acc	Wd-Acc	LL	Time (seconds)
Gibbs	58.4988962	10.8695652	-7.9877982	13.6
Loopy Belief	64.569536424	17.391304348	-7.957841617	39

Loops

Algorithm	Ch-Acc	Wd-Acc	LL	Time (seconds)
Gibbs	46.0431655	3.57142857	-8.457067	2.07
Loopy Belief	55.395683453	3.5714285714	-8.187460292	5.2

LoopsWS

Algorithm	Ch-Acc	Wd-Acc	LL	Time (seconds)
Gibbs	60.3395062	8.46153846	-7.6760045	9.7
Loopy Belief	65.740740741	12.307692308	-7.825232567	30.7

Loopy Belief performs better

