

## Part 2:

### Results:

The full results\* (validation and test log likelihoods) are listed according to parameters and method in the accompanying .txt files. R values were tuned by selecting candidates by some ratio of the size of the dataset, with further fine-tuning done in select cases.

Final results:

Dataset	Method	k-value	r-value	Average LL	Std. Dev.
accidents	Mixture	20	N/A	-29.9082	0.0420
baudio	Mixture	20	N/A	-40.2256	0.0262
bnetflix	Mixture	20	N/A	-56.8525	0.0202
jester	Mixture	20	N/A	-53.1806	0.0379
kdd	Mixture	10	N/A	-2.1413	0.0044
msnbc	Mixture	10	N/A	-6.4625	0.0407
nltns	Mixture	10	N/A	-6.1045	0.0075
plants	Mixture	20	N/A	-1.5126	0.3416
pumsb_star	Mixture	20	N/A	-23.9793	0.0149
tretail	Random Forest	250	1822	-10.9376	0.3416

Ranking the methods depends, my implementation of Mixture of Trees outperforms my Random Forest ensembles in almost all the provided datasets. Both methods seem to outperform the single-tree method in general. It seems odd that the Mixture performed so dominantly, although I was only able to test up to 250 components and a few r-values for the Random Forests. Better understanding the datasets and more tuning of the hyperparameters might allow for constructing a better model with either method.