NPFL097 Assignment 2
Latent Dirichlet Allocation

David Mareček

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In this assignment, you will get a document with English news with all the spaces removed. Your task is to implement the unsupervised text segmentation model using Chinese Restaurant Process as presented in the previous lectures and tune its hyperparameters to obtain as good result as possible. The preferred programming language is Python.

Send me your final source code and the parameters of the best obtained segmentation and the segmented text by email: `marecek@ufal.mff.cuni.cz`.

Tasks:

1. Implement the model based on Chinese Restaurant Process as described in the previous lecture. Set the hyperparameters $\alpha = 100, p_c = 0.5, p_{cont} = 0.99, T = 1$. *(4 pts)*

2. Debug your code, check the output segmentation and try to change the parameters to obtain better segmentations. *(2pts)*

3. Download the gold data and the evaluation script. What precision and recall you get? *(1 pt)*

4. Try to do annealing and run the model for different temperatures. You can also try changing the temperature during the sampling. E.g., start with a higher temperature and then gradually decrease it to zero. *(2pts)*

5. Instead of Chinese Restaurant Process, try to employ the Pitman-Yor Process. Does it improve your results? *(1 pt)*