

Project Report, CPSC-540

Bitu Nejat 45113115
Sohrab Salehi 86711132
Xi Laura Cang 40460024

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1 Intro

1.1 Dirichlet Process Mixture Models

- brief description - establish notation.
- the inference problem

We would like to sample from the posterior:

$$p(\eta_1, \eta_2, \dots, \eta_N | y_1, y_2, \dots, y_N)$$

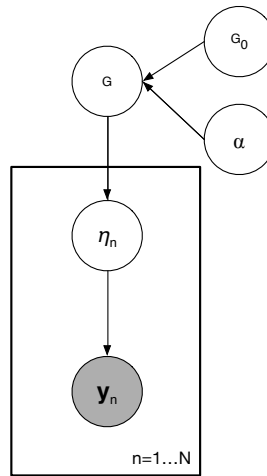


Figure 1: PGM for DPMMs

1.2 Chinese Restaurant Process Representation

- brief description
- hierarchical model
- Sampling Algorithm Pseudocode [1]

1.3 Stick Breaking Representation

- brief description
- hierarchical model
- Sampling Algorithm Pseudocode

2 Experiments

2.1 Synthetic Data

2.2 Real Data

2.3 Results

- describe clustering accuracy measures used
- scatter clustering plot for CRP
- scatter clustering plot for SBR

3 Discussion

3.1 Which one was better?

3.2 Future Work

References

- [1] Radford M Neal. Markov chain sampling methods for dirichlet process mixture models. *Journal of computational and graphical statistics*, 9(2):249–265, 2000.

4 Appendix