Nonparametric Bayes

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Mostly based on **A Tutorial on Bayesian Nonparametric Models** by Samuel J. Gershman.

Intuition

- How many classes should I use in my mixture model?
- Learning more from the data as we see it.
- Parametric models...
- Non-parametric models have infinite number θ parameters.
- Examples, topics in Wikipedia, species, social networks

Bayesian Inference

- $P(A|D) \propto P(D|A)P(A)$

Generative Model

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Clustering

- We want to get k groups.
- We can use Gaussian Mixture Models.
- $\mu_k \overset{iid}{\sim} \mathcal{N}(\mu, \sigma^2)$
- Put an image here.

Python

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Dirichlet Distribution

- β distribution.
- Dirichlet distribution is a generalization of β distribution.

Thank you
Questions?