

# Probabilistic Machine Learning:

## 9. Plate Notation

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HR EXCELLENCE IN RESEARCH

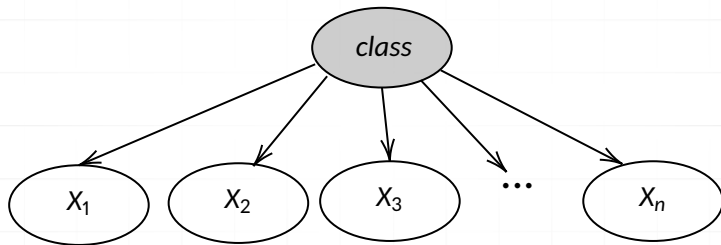


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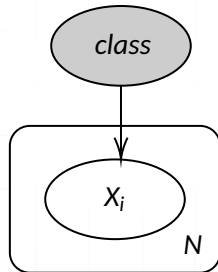
The presentation was inspired by the presentation of Zoubin Ghahramani at MLSS 2012,  
La Palma



## Repeated Structure of Bayesian Network: Naive Bayes



# Plate Model

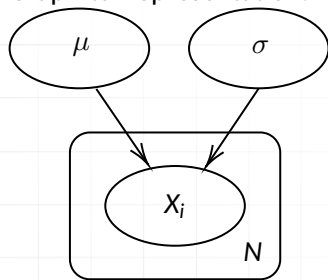


## Example

Consider a data set of  $N$  points generated i.i.d. from a Gaussian with mean  $\mu$  and standard deviation  $\sigma$ :

$$p(X_1, \dots, X_N, \mu, \sigma) = p(\mu)p(\sigma) \prod_{i=1}^N p(X_i | \mu, \sigma)$$

Graphical representation:



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