

Homework 7

Next homework is related to a type of graphical model called “Hidden Markov Model”. This type of model is used very often in modelling sequences and is an extension of statistical method called “Markov Chains”. Your task for this week is to look up Hidden Markov Models in the Machine Learning or Statistics literature and answer the following tasks and questions:

- 1) What is the graphical representation of Hidden Markov Model? Draw a corresponding Bayesian Network graph.
- 2) How is Hidden Markov Model related to Markov Chains? What advantages does the HMM bring?
- 3) Describe shortly how we can do Inference and Learning with HMMs (no need to write the exact algorithms).
- 4) Name 3 concrete applications where modelling with HMMs is useful.

Have fun!