

## Mikkel N. Schmidt and Morten Mørup

### Introduction to Bayesian Modeling

*Bayesian inference is the process of setting up a probabilistic model, fitting it to a set of data, and drawing conclusions by summarizing the posterior distribution or making predictions for new observations. After introducing the Bayesian inference framework, we will discuss inference procedures in particular focusing on Monte Carlo simulation. The aim of the day is to gain a strong understanding of the steps involved in Bayesian inference, to serve as a foundation for the models discussed in the rest of the course. As an example of Bayesian modeling we will carefully go through the infinite relational model which is a prominent model for identifying structure in complex networks.*

Reading material: M. N. Schmidt, M. Mørup, Non-parametric Bayesian modeling of complex networks. An introduction, IEEE Signal Processing Magazine, vol. 30(3), pp. 110-128, 2013.