Seminar über Statistik FS2008: Bayesian Statistics

- The Bayesian Paradigm
  - prior/likelihood/posterior distribution, predictions, likelihood principle
  - [GCSR03] Chapt. 2 + 3, [Rob07] Chapt. 1
- Inference and Decision Theory
  - loss and risk, actions and decisions, optimalities
  - [Rob07] Chapt. 2
- Prior Information
  - conjugate priors, non-informative priors, eliciting priors
  - [Rob07] Chapt. 1.5 + 3
- Nonparametric Bayes: The Dirichlet Process
  - [Sch95] Chapt. 6.1, [Fer73], [Set94]
- Asymptotics
  - Consistency, asymptotic normality and asymptotic efficiency of Bayes estimators
  - [Leh83] Chapt. 6.7, [GCSR03] Chapt. 4
- Model Selection
  - Bayes factor, Bayesian information criterion, model averaging
  - [Rob07] Chapt. 5.1 + 5.2 + 7.1 + 7.2 + 7.5
- Hierarchical and Empirical Bayes
  - [Rob07] Chapt. 10, [GCSR03] Chapt. 5
- Computational Aspects
  - Markov chain Monte Carlo, Gibbs sampling, Hastings-Metropolis algorithm
  - [Rob07] Chapt. 6.3, [GCSR03] Chapt. 11
- Axiomatic Treatment of Utility, Betting Systems
  - [Rob07] Chapt. 2.2, [BS94]

References


