

Decision Theory and Bayes Methods, 5 hp

8.-10. February 2017

The goal of this lecture course is to teach relation between decision theory and Bayesian methods, their application with help of computer intensive methods and the interpretation of results obtained by Bayesian methods. The course is also part of a joint Swedish PhD course on fundamental principles of statistical inference.

Literature

Liese F. and Miescke K.: Statistical Decision Theory, Springer 2008

Christian P. Roberts: The Bayesian Choice From Decision-Theoretic Foundations to Computational Implementation ISBN 978-0-387-71598-8, second edition in paperback 2007

Script: Computer intensive statistics

Content

Introduction to Bayes modeling (4h)

Decision theory (2h)

Introduction in to Le Cam theory on comparison of experiments (2h)

Bayes linear models (4h)

Computer intensive Bayes methods (MCMC, ABC, R) (4h)

Examination: Home exam: Project

Teachers

Rauf Ahmad (rauf.ahmad@statistik.uu.se) (Decision theory)(2h)

Behrang Mahjani (behrang.mahjani@ki.se)(Computer intensive methods)(4h)

Dietrich von Rosen (dietrich.von.rosen@slu.se) (Linear Bayes models)(4h)

Tilo Wiklund (tilo.wiklund@math.uu.se)(Comparison of experiments)(2h)

Silvelyn Zwanzig (zwanzig@math.uu.se)(Bayes modeling)(4h)

Schedule

Wednesday 8/2

13:15- 15:00 rum 2214 ITC, Bayes Modeling I (Silvelyn Zwanzig)

15:15- 17:00 rum 2214 ITC, Bayes Modeling II (Silvelyn Zwanzig)

17:15- 19:00 rum 2214 ITC, Decision Theory (Rauf Ahmad)

Thursday 9/2

10:15- 12:00 rum 1146 ITC, Le Cam Theory (Tilo Wiklund)

13:15- 15:00 rum 1313 ITC, Linear Models I (Dietrich von Rosen)

15:15- 17:00 rum 1213 ITC, Linear Models II (Dietrich von Rosen)

ca 17:30 - ... social event

Friday 10/2

08:15- 10:00 rum 1212 ITC, MCMC (Behrang Mahjani)

10:15- 12:00 rum 1212 ITC, ABC (Behrang Mahlani)

13:15- 14:15 rum 2214 ITC, Summary and Conclusions