Bayesian Networks

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About me: Rudolf Kruse

in 1979 diploma in mathematics (minor computer science) at TU Braunschweig

there dissertation in 1980, habilitation in 1984

2 years full-time employee at Fraunhofer Institute

in 1986 offer of professorship for computer science at TU Braunschweig

since 1996 professor at the University of Magdeburg

research: data mining, explorative data analysis, fuzzy systems, neuronal networks, evolutionary algorithms, Bayesian networks

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consultation: Wednesdays, 11 a.m. – 12 noon

About the working group Computational Intelligence

teaching:

Intelligent Systems	Bachelor (2 V + 2 Ü, 5 CP)
Evolutionary Algorithms	Bachelor (2 V + 2 Ü, 5 CP)
Neuronal Networks	Bachelor (2 V + 2 Ü, 5 CP)
Fuzzy Systems	Master (2 V + 2 Ü, 6 CP)
Bayesian Network	Master (2 V + 2 Ü, 6 CP)
Intelligent Data Analysis	Master (2 V + 2 Ü, 6 CP)

(pro-)seminars: Classification Algorithms, Clustering Algorithms

research examples:

Analysis and simulation of natural neuronal networks (C. Braune)
Decision theory / heuristics (C. Doell)
Analysis of social networks (P. Held)

About the lecture

lecture dates: Thursday, 9:15 a.m.–10:45 a.m., G29-K059

information about the course:
`http://fuzzy.cs.ovgu.de/wiki/pmwiki.php?n=Lehre.BN1415`

- weekly lecture slides as PDF
- also assignment sheets for the exercise
- important announcements and date!

Content of the lecture

Introduction

Rule-based Systems

Elements of Graph Theory

Decomposition

Probability Foundations

Applied Probability Theory

Probabilistic Causal Networks

Propagation in Belief Networks

Learning Graphical Models

Decision Graphs / Influence Diagrams

Frameworks of Imprecision and Uncertainty

About the exercise

active participation and explanations of your solutions

tutor will call attention to mistakes and answer questions

pure ‘calculations’ of sample solution is not the purpose

tutor: Pascal Held `mailto:pheld@ovgu.de`

consultation: Just knock on the door and see if he is there :-)

first assignment due October 20, 2014

Monday, 1:15 p.m.–2:45 p.m., G29-E037

Conditions for Certificate ("Schein") and Exam

Certificate will get who...

contribute well in exercises every week,

present ≥ 2 solutions to written assignment during exercises.

tick off $\geq 66\%$ of all written assignments,

small colloquium (≈ 10 min.) or written test (if > 20 students).

Exam or marked certificate will get who...

meet the certificate conditions

pass the oral exam (≈ 25 minutes) or written exam (if > 20 students).