Data Mining

Benno Stein   Theo Lettmann
Contents

I. Introduction

II. Cluster Analysis

III. Nearest Neighbor Strategies

IV. Latent Variables Analysis

V. Association Analysis
Objectives

- understand and explain the basic concepts of data mining
- understand formalized concepts and methods and be able to implement them in the form of algorithms
- sensibly select, adapt, and apply relevant methods
- become able to educate yourself
Related Fields

1. Statistics  [paradigms, models]
2. Mathematics
3. Information Retrieval  [methods, algorithms]
4. Knowledge Processing
5. Heuristic Search
6. Decision Support Systems  [applications]
7. Business Intelligence
8. Web Technology
Literature

Data Mining:

- D. Hand, H. Mannila, P. Smyth.  
  *Principles of Data Mining*  

- P.N. Tan, M. Steinbach, V. Kumar.  
  *Introduction to Data Mining*  

- I.H. Witten, E. Frank.  
  *Data Mining: Practical Machine Learning Tools and Techniques*  
Software

Programming:

- Eclipse Foundation, Inc., Canada.
  *Eclipse SDK*

Statistics:

- R Development Core Team.
  *R*
  Version 3.x.  [www.r-project.org](http://www.r-project.org)

- E. Jones, T. Oliphant, P. Peterson and others.
  *SciPy*
  Version 1.x.  [www.scipy.org](http://www.scipy.org)

- J.W. Eaton.
  *GNU Octave*
  Version 5.x.  [www.gnu.org/software/octave](http://www.gnu.org/software/octave)