Mining the Success for Movies

Student Project Data Mining HWS17
Team 6

Presented by

Steffen Jung
Adrian Kochsiek
Martin Koller
Marvin Messenzehl
Daniel Szymkowiak

Submitted to the
Data and Web Science Group
Prof. Dr. Heiko Paulheim
University of Mannheim

October - December 2017

Contents

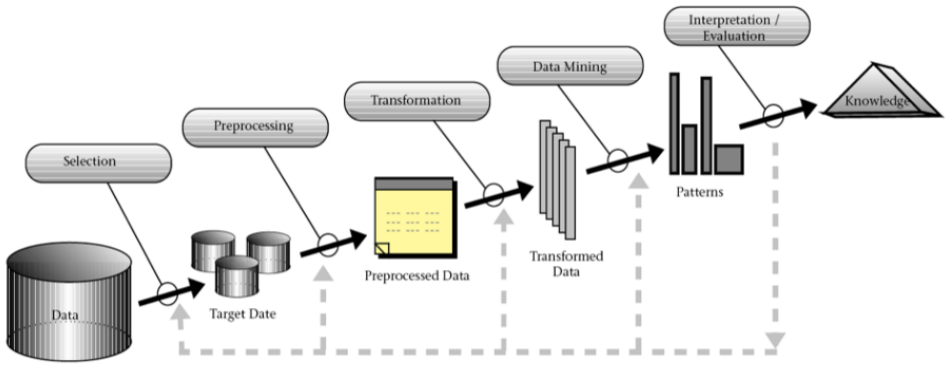
List of Algorithms

List of Figures

List of Tables

Chapter 1

Data Selection



- Selection:
  - What data is available?
  - What do I know about the provenance of the data?
  - What do I know about the quality of the data?
- Exploration
  - Get an intitial understanding of the data
  - Calculate basic summarization statistics
  - Visualize the data
  - Identify data problems such as outliers, missing values, duplicate records

Chapter 2

Preprocessing and Transformation

- Transform data into a representation that is suitable for the chosen data mining methods
  - number of dimensions
  - scales of attributes (nominal, ordinal, numeric)
  - amount of data (determines hardware requirements)
- Methods
  - Aggregation, sampling
  - Dimensionality reduction / feature subset selection
  - Attribute transformation / text to term vector
  - Discretization and binarization
- Good data preparation is key to producing valid and reliable models
- Data preparation estimated to take 70-80% of the time and effort of a data mining project!

Chapter 3

Data Mining

- Input: Preprocessed Data
- Output: Model / Patterns

1. Apply data mining method
2. Evaluate resulting model / patterns
3. Iterate:
    - Experiment with different parameter settings
    - Experiment with different alternative methods Improve preprocessing and feature generation Combine different methods

Chapter 4

Interpretation / Evaluation

- Output of Data Mining
  - Patterns
  - Models
- In the end, we want to derive value from that, e.g.,
  - gain knowledge
  - make better decisions
  - increase revenue

Appendix A

Program Code / Resources

The source code, a documentation, some usage examples, and additional test results are available at ...

They as well as a PDF version of this thesis is also contained on the CD-ROM attached to this thesis.

Appendix B

Further Experimental Results

In the following further experimental results are ...