

Classification rules and descriptive induction

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Voting dataset

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- 435 instances
- 16 attributes
 - 16 nominal attributes
 - 0 numeric attributes
- No target variable
- No missing values

Classification rules: Weka → classifiers → rules → JRip

Baseline classifier: Weka → classifiers → rules → ZeroR

Association rules Weka → associations → Apriori

Quality of association rules

Classification and Association Rules

Compare classification and association rules

- Purpose
- Format
- Quality measure
- Ruleset / List of rules
- Exhaustiveness of algorithms

Comparison of classification and association rules

- Purpose
 - Classification rules: classification
 - Association rules: exploratory data analysis, descriptive induction
- Format
 - Both in the format $X \rightarrow Y$
 - Classification rules: Y is a pair "target variable=class"
 - Association rules: both X and Y are itemsets = conjunctions of attribute-value pairs
- Quality measure
 - Classification rules: classification accuracy of the ruleset, precision, rule accuracy, weighted relative accuracy
 - Association rules: support, confidence, lift, leverage, conviction
- Ruleset / List of rules
 - Classification rules: can be both: unordered sets of rules or ordered list of rules
 - Association rules: unordered set of rules
- Exhaustiveness of algorithms
 - Classification rules: heuristic algorithms
 - Association rules: exhaustive algorithms, guarantee the optimal results