

Affinity analysis workshop outline

1. Introduction:

Give a brief introduction to what affinity analysis means and then talk about the underlying concepts, through which affinity analysis can be done where we discuss a number of advanced methods that are designed to make association pattern mining :

Examples: Discuss about some examples where association rule mining is usually applied, such as affinity analysis, demographic and profile analysis, Recommendations and Collaborative Filtering, bioinformatics etc

Business use case: Pick some real world business use case and how this can provide a solution to it. (market basket analysis in this case)

These topics are all related to the extraction of interesting summary information from item sets in different ways.

1. Prerequisites:

A general idea of what associative rule mining means, python and general machine learning ideas.

2. overview:

1. Summarization: The output of association pattern mining is typically very large. For an end-user, a smaller set of discovered itemsets is much easier to understand and assimilate. we will introduce a number of summarization methods such as finding maximal itemsets, closed itemsets, or nonredundant rules.
2. Querying: When a large number of itemsets are available, the users may wish to query them for smaller summaries. we will discuss a number of specialized summarization methods that are query friendly. The idea is to use a two-phase approach in which the data is preprocessed to create a summary. This summary is then queried.
3. Constraint incorporation: In many real scenarios, one may wish to incorporate application-specific constraints into the itemset generation process. Although a constraint-based algorithm may not always provide online responses, it does allow for the use of much lower support-levels for mining, than a two-phase “preprocess-once query-many” approach.

3. Research design and the market basket analysis problem

1.Introduction: explain the problem in detail

2.Problem:

3.solutions :

4.Algorithms to study

◦ **Association Pattern mining:**

1. Introduction

2. Pattern mining framework:

A general outline that describes the problem and various ways that one might use to solve it

3. Pattern mining Algorithms discussion:

Discuss some important terminologies and some algorithms such as frequent item mining, apriori, enumeration tree etc

4. Summary

◦ **Advanced concepts in Association Pattern mining:** [additional, only if required]

1. Introduction

2. Pattern summarization & querying

4. data modelling and EDA with some dataset:

5. Usecase In real world: