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# A Survey on Data Mining Trends & Tasks

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**ABSTRACT-** Data mining is a process which finds useful patterns from large amount of data. The aim of this paper is to explore the data mining trends and tasks that make data mining technology to provide excellent results. It is very important to gather data from different data sources, to maintain the data, generate information and knowledge. There is high use of computers and tremendous growth in computing power and storage capacity that lead to the growth in data collection.Due to the increase in the data, it is important to extract knowledge/information from the large data repositories. Hence, Data mining has become an essential factor in various fields.

## I. Introduction:

Now a days, each and every day the human beings are using the vast data and these data are in the different fields .It may be in the form of documents, graphical formats, video, records .As the data are available in the different formats so that the proper action to be taken. Not only to analyze these data but also take a good decision and maintain the data .The user requiring the data should be retrieved from the database and make the better decision .This technique is actually called as a data mining or Knowledge Hub or simply KDD (Knowledge Discovery Process). [1, 2, 3].

## II. Overview of Data Mining

Data mining is a process of extraction of useful information and patterns from huge data. It is also called as knowledge discovery process, knowledge mining from data, knowledge extraction or data /pattern analysis.



Data mining is a logical process that is used to search through large amount of data in order to find useful data. The goal of this technique is to find patterns that were previously unknown. Once these patterns are found they can further be used to make certain decisions for development of their businesses.

## III. TRENDS IN DATA MINING

### A. Historical Trends

Data mining application era was perceived in early 1980s principally focused on single tasks driven by research tools. Data mining is helpful in various disciplines like Data Base Management Systems (DBMS), Artificial Intelligence (AI), Machine Learning (ML) and Statistics. Historical trends of data mining are explained as follows [4]:

1) Data Trends: Data mining algorithm work best with the numerical data especially collected from a single data base and various data mining techniques have developed for flat files, traditional and relational database where the data is mostly represented in the tabular form.

2) Computing Trends: The computing techniques such as AI, ML and pattern reorganization evolved to do the data mining tasks in ease manner. Various data mining techniques like Induction, Compression, approximation and other algorithms developed to mine the large volume of heterogeneous data stored in the data warehouse.

### B. Current Trends

Advancement in data mining with various integrations and implications of the methods and techniques has formed the present data mining applications to tackle the various challenges.

### C. Future Trends

Future trends of data mining would be promising in the coming years based on this observation. The patterns in data mining can help in research or business development to ensure the growth and development of the companies. Future data mining technologies involve standardization of data mining languages; predictive analysis, advanced text mining, Semantic and image mining.

### 1) Standardization of Data Mining Languages

Different syntaxes are used in various data mining tools, hence standardized syntaxes needs to be developed in order to make convenient coding for the users. Standardization of interaction language and flexible user interaction has to be much concentrated by the data mining applications [4].

### 2) Predictive Analysis

The data is put through algorithms based on certain attributes such as trends, relations and patterns and predictions are thereby projected. It provides a way for significant increase in decision making capabilities especially in business process. For instance, predicting customer behaviours with the help of mathematical modelling and statistical analysis, their spending habits on their credit cards can be determined and credit point allotted accordingly. This kind of predictive analysis can create huge impact in the near future and business can propagate in well manner based on such predictions.

### 3) Advanced Text Mining

The text mining was only performed on structured data in early days. But, majority of unstructured data are available in the form of memos, emails, surveys, notes, chats, whitepapers, forums, presentation, etc. It can be tapped and accessed using data mining services. Vast amount of information can be gathered using such text mining

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techniques and this can be used effectively for the business purpose.

### 4) Semantic and Image Mining

In semantic and image mining, images can be searched for identifying patterns and the information derived can be used for various scientific and business advancements. It will take a predominant stage in future as researchers will be able to find hidden meaning in data and document using artificial intelligence and structural analysis software.

### IV. The Data Mining Task

The data mining tasks are of different types depending on the use of data mining .The data mining tasks are classified as[1,5]:

### 1) Exploratory Data Analysis:

This data mining task will be useful for two purposes such as without the knowledge for what the customer is searching and for analyzing the data. These techniques are interactive and visual to the customer.

### 2) Descriptive Modelling:

It describe all the data and models for overall probability distribution of the data,
Partitioning of the data into groups and models describing the relationships between the variables.

### 3) Predictive Modelling:

This model permits the value of one variable to be predicted from the known values of other variables.

### 4) Discovering Patterns and Rules:

This task is used to find the hidden pattern and to discover the pattern in the cluster. In a cluster a number of patterns of different size and clusters are available .The aim of this task is to detect the best pattern .This can be done by using techniques in the data mining algorithm like(K-Means/K-Medoids) .These are called the clustering algorithm.

### 2.5 Retrieval by Content:

This task is to find the data sets of frequently used for audio/video as well as images. It is also used for finding pattern similar to the pattern of interest in the data set.

### V.LITERATURE SURVEY:

Data mining is a process that uses a variety of data analysis tools to discover patterns and relationships in data that may be used to make valid predictions. Data mining describes the data, summarizes its statistical attributes and reviews it using charts and graphs. [1]

It reviews that data mining and knowledge discovery in databases have been attracting a significant amount of research, industry, and media attention .This article provides an overview of this emerging field, clarifying how data mining and knowledge discovery in databases are related both to each other and to related fields, such as machine learning, statistics, and databases. [3]

This paper reviews that due to the importance of extracting knowledge/information from the large data repositories, data mining has become an essential component

in various fields of human life including business, education, medical, scientific etc.[4]

It reviews that data mining is the process of discovering meaningful new correlations, patterns and trends by sifting through large amounts of data stored in repositories, using pattern recognition technologies as well as statistical and mathematical techniques. [5]

## VI. CONCLUSION

In this paper, I have briefly reviewed the data mining tasks and trends from its beginning to the future. This review would help the researchers to focus on the various issues of data mining. Data mining is commonly used in these domains to increase the sales, to reduce the cost and enhance research to reduce costs, enhance research. In future course, the various classification algorithms and computing approach in designing of efficient classification algorithms for data mining will be reviewed.

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