

DATA MINING IN DIFFERENT SCOPE

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Abstract:

Data Mining is the process of analyzing data from different perspectives and summarizing it into useful information. Although data mining is a relatively new term, the technology is not. Data mining software has analytical tools for analyzing data. It allows users to analyze data from many different dimensions, categorize it, and summarize the relationships identified.

Data Mining can be used for any area such as Market Analysis, Fraud Detection, Customer Retention, Production Control, Science Exploration.

Keywords :

Data Mining, Areas of Data Mining.

Objectives:

To find some areas where data mining and tools can be useful

Methodology:

The secondary sources of data and related study were used.

Introduction:

Data mining tools predict future trends and behaviors. It allows business to make proactive, knowledge-driven decisions. The automated, prospective analyses offered by data mining move beyond the analysis of past events provided by retrospective tools typical of decision support systems. Data mining tools can answer business questions that traditionally were too time consuming to resolve. They use databases for hidden patterns, finding predictive information that experts want.

The Scope of Data Mining:

Data Mining is the procedure of mining knowledge from data. The information or knowledge extracted so can be used for any of the following areas –

- Market Analysis
- Fraud Detection
- Customer Retention
- Production Control
- Science Exploration

Data Mining in Market Analysis :

Data Mining can be very useful in Market analysis in terms of :

- **Customer Profiling** – Data mining helps determine what kind of people buy what kind of products. It can add best way to look forward for adding new customers.
- **Identifying Customer Requirements** – Data mining helps in identifying the best products for different customers according to their requirements
- **Cross Market Analysis** – Data mining performs association/correlations between product sales. With this kind of analysis different product comparison leads to best results.
- **Target Marketing** – Using Data mining techniques its easy to find customers who share the same characteristics such as interests, buying habits, income, etc. which leads to create strategy.
- **Summary Information** – Data mining provides various multidimensional summary reports which can help to improve various areas.

Data Mining in Fraud Detection

Fraud remains a challenge for businesses and organizations in many fields. Data mining is an effective method for detecting various types of fraud including mobile telecommunication, credit card and medical insurance fraud as well as detecting intrusion to computer systems. for example telephone call frauds, it helps to find the destination of the call, duration of the call, time of the day or week, etc. It also analyzes the patterns that deviate from expected norms.

Data Mining in Customer Retention

"Customer Retention" is an increasing issue in today's competitive commercial world. This is especially relevant and important for sales and services related industries. Data mining create multi-dimension data which can predicting customers likelihood and can become key for customer retention.

Data Mining in Production Control

The production process in manufacturing has recently become highly complex. To meet the goals of process control require monitoring and control of process variables. It is difficult to solve problems in a process, by only using techniques that depend on the knowledge and engineering. Knowledge discovery in databases (KDD) techniques of data mining are supposed to assist engineers in extracting the non-trivial characteristics of a production process and control.

Data Mining in Science Exploration

Never before in history has data been generated at such high volumes as it is today. Exploring and analyzing the vast volumes of data is becoming increasingly difficult. Information visualization and visual data mining can help to deal with the flood of information. The advantage of visual data exploration is that the user is directly involved in the data mining process. There are a large number of information visualization techniques which have been developed over the last decade to support the exploration of large data sets.

Different data mining tools are present using which science exploration become easy.

Conclusion:

In current globalised world Terabytes of data generated every day. To extract hidden predictive information and problem solution from large volumes of data, data mining (DM) techniques are needed. Organizations are starting to realize the importance of data mining in their strategic planning and success, so the scope of Data Mining techniques is extending day by day.

References:

1. <http://link.springer.com>
2. <http://ieeexplore.ieee.org>

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