Significance of Data Mining for Library Personnel

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**ABSTRACT**

Data mining which is a relatively modern term which has come to acquire great significance in the field of library science. It is a way to mine [collect, analyse, summarise and categorise] data for the benefit of library users and personnel. By it knowledge is extracted from large data bases and it has been used successfully in the fields like finance and marketing. It compresses three essential units: data, information and knowledge, which are interdependent. We all know that it has evolved from many disciplines, namely, databases, information retrieval, statistics, algorithms and machine learning. In the digital age of today data mining is a must for the efficiency of library which, otherwise, will be failing in its objective, i.e. in dissemination of knowledge to the masses.

**Key Terms**: Library System, Facebook, MySpace, LinkedIn, You Tube, Flickr.

**INTRODUCTION**

Data mining is a systematic process where data are analyzed from a variety of perspectives and then are summarized into useful information. It is a process whereby knowledge is extracted from very large database, however, it apart from data analysis, performs other functions. It has been employed with some amount of success in many spheres such as finance and marketing. Data mining has evolved from the influence of many disciplines, viz., databases, information retrieval, statistics, algorithms and machine learning.

Though data mining is an entirely new term, its technology is very old. There have been continuous innovations in the field of computer processing power, disk, storage and statistical software and together they have led to the accuracy of analysis in minimum list. It is comprised of three basic units, namely, data, information and knowledge. They are interdependent and their sequence is always in ascending order. At every stage, each gets promoted to the other however, as the paper undertakes to analyse the functions of Ubiquitous Data Mining (UDM) in the present context, it becomes incumbent to analyse UDM in detail starting from the theories of UDM to all the other data representation techniques. The study aims to study in detail data mining, visual data mining, multimedia data mining and hypertext and what not.

- **Ubiquitous Data Mining (UDM)**

  With the advent of scientific devices like laptops, cell phones and computer etc. access to large quantity of data has become ubiquitously possible. Then data are analysed in an advanced manner for picking out useful knowledge. But, we must admit that the path of UDM is beset with challenges like human-computer interaction and data management. It is also a matter of our concern to explore the relationship between data mining technology and human way of life. UDM takes into consideration the various theories of UDM, advanced algorithms for various computer applications, issues pertaining to data management etc. UDM is a must in the fields, namely, collaboration, negotiation, engineering, medicine, cooperation and many other disciplines.

- **Hypertext and Hypermedia**

  Hypertext and hypermedia data mining bears close association with web mining and multimedia mining. It is subsumed of various forms of hypermedia information viz. text markups, text,
hyperlinks etc. In content and applications both are quite similar. The various sources of hypertext incorporate digital libraries, online catalogues, hyperlinks etc.

Hypertext and hypermedia data mining uses techniques like classification (supervised learning), clustering (unsupervised learning) semi-structured learning and analysis of social network. In the case of the first technique, viz. classification, training data are reviewed and items are classified on the basis thereof. On the other hand, clustering organizes documents in a hierarchical order. Semi-supervised learning and social network analysis hold importance in data mining based on hypermedia. In the third case, we find both labelled and unlabelled documents. In the last, web is regarded as a social network that observes such networks as are based on collaborative association.

Visual data mining is simply based on visualization, computer graphics, visual perception, cognitive psychology, diagrammatic reasoning, and data formatting among many other things. There have been numerous researches and developments which have enriched the methods and techniques of visual data mining. Together, they have opened up new avenues or new researches in the field of visual data mining. The broad area of study in the field of visual data mining include visual reasoning, visual environments, visual explanations, collaborative exploration metrics for evaluation, generic system architectures and prototypes etc.

- **Multimedia Data Mining**

Through multimedia data mining various types of data viz. images, audio, video, animation are mined and analysed. Multimedia data mining includes text mining, hypertext mining, hypermedia mining and they are all closely linked to each other. It also includes audio (music) data mining which uses audio signals to hint at various data patterns. It sums up music styles predicated on tone, tenor and tempo produced by various musical instruments.

In the age of UDM integration of data mining techniques have become a normal thing. Multimedia data mining has made advertising and other business activities quite easy, cheap and attractive. It makes available demographic information related to customers that were previously not possible and known to us. However, it could be dangerous as it discloses confidential information. In short, UDM offers such opportunities to us as were inconceivable in the past. It required expertise to organize and prepare system for mining. Today, it is easily available. This is to be noted here that organizations must be careful in terms of making decision regarding employees in order to avoid legal implications. Human resource and data mining together can create new opportunities and avenues for organizations to reap favorable crop.

On the whole, it can be optimistically predicted that the future of data mining is bright and smooth. It will harvest new developments methods and technologies. The field of data mining is quite new and promises limitless possibilities and many more successes. It will expand its applications and is sure to integrate technologies and methods and thereby it will broaden its scope for users.

In libraries and information centers data mining web mining can primarily be used with a strong client focus-use and usage, choice of materials, budget commitments, communication and marketing of information and promoting library information services.

UDM facilitates libraries to define relationship between factors, internal (namely staff skills etc) and external (economic indicators, demography of customers etc.). It also points out the impact of library on customers and its overall performance and services.

**CONCLUSION**

From the foregoing discussion, it can be inferred that data mining is not only a computer activity, but also an academic activity that helps a library in the collection, analysis and dissemination of knowledge and information. With the coming of laptops, palmtops, cell phones and PCs etc. access to large quantities of data has now become ubiquitously possible, though there are certain challenges that UDM has to face and they are human-computer interaction and data management. The UDM has to study the following issues pertaining to advanced algorithms for cell phones among other things. Specie bred mobile devices for UDM, applications of UDM, issues related to location management in UDM and technology for web-based applications of UDM. The UDM is subsumed of following data mining: hypertext and hypermedia, visual and multimedia. Together, they enable libraries to determine relationship among internal factors such as areas of subjects’ product positioning and external factions such as economic indicators, comparative performance of various subjects and customer demographics. They enhance the overall performance of the library.

**REFERENCES**