

Enhancing Services of Libraries through Bibliomining

Mandana Mir Moftakhari

PhD Student at Hacettepe University, Department of Information Management.
Email: mir_moftakhari@yahoo.com

Güleda Doğan

PhD Student & Research Assistant of Hacettepe University Department of
Information Management. Email: gduzyol@hacettepe.edu.tr

We will discuss about:

- Big Data
- Knowledge Discovery
- Datamining
- Bibliominig
- Advantages of Bibliomining

Big Data !

- Data overload is a serious problem that has been grown by technical advances.
- Human beings have to cope with such overwhelming amounts of data and manage it in order to obtain relevant information and knowledge to solve their problems.

Big Data !

- Organizations have to overcome with massive data volume to achieve opportunities for:
 - ❖ better decision-making
 - ❖ gaining competitive advantages

knowledge Discovery in Databases as a Solution

- knowledge discovery in databases (KDD) is “the nontrivial process of identifying
- valid
- novel
- potentially useful and
- ultimately understandable patterns in data”

(Fayyad, Piatetsky-Shapiro, Smyth and Uthurusamy ,1996)

KDD Involves Different Steps

- Selection
- Preprocessing
- Transformation
- Data mining
- Interpretation or evaluation

(Fayyad et al., 1996)

What Is Data Mining?

- As the center process of KDD is
“the analysis of observational data sets to find unsuspected relationships and to summarize the data in novel ways that are both understandable and useful to the data owner.”

(Hand, Mannila and Smyth, 2001)

Data mining Using Areas

- Customer service support
- Prediction
- Estimation
- Forecasting
- Decision support
- Manage budget

Libraries

- The main aim of libraries is to response to the information requirements of users so identifying those needs and trying to improve library services continually is significant for a library's success.

The same problem (Big Data) in libraries

- Due to automation of libraries they have gathered lots of data about
 - ❖ their users
 - ❖ circulation history
 - ❖ collections
 - ❖ search patterns
- Administrators and managers of all library services have to deal with massive amount of raw data.

Libraries

- The most disappointing problem for library managers is being aware of that the information needed exist somewhere among huge amount of data but they are not able to obtain it.

Data Mining in Libraries (Bibliomining)

- A conceptual framework for “**bibliomining**” was first used by Nicholson and Stanton (2003) for data mining in libraries.
- Bibliomining is the combination of the terms “**bibliometrics**” and “**data mining**” in order to take advantages of bibliometrics and user-based data mining in the same time.

(Nicholson ,2006)

What Is Bibliomining?

- Bibliomining as another synonymy of libraries' data mining is
“application of statistical and pattern recognition tools to the data associated with library systems in order to aid decision-making or justify services”

(Nicholson, 2003, p. 146)

Bibliomining Process Includes

- Identifying the aim areas
- Determining sources of data
- Gathering and cleaning the data into a data warehouse
- Choosing proper analyzing tools
- Finding new patterns
- Prepare reports and implementing the results

How Bibliomining Enhancing Services of Libraries?

There is no doubt that bibliomining can provide deeper understanding of

- Resources
- Services
- Users of a library system
- Management requirements
- User needs

How Bibliomining Enhancing Services of Libraries?

- Bibliomining can explore individual preferences by examining users' behavior in order to prepare more proper resources and to serve better services through personalized service.

How Bibliomining Enhancing Services of Libraries?

It becomes possible for administrators to

- Connect different data sources
- Discover relationship between disparate data
- Predict future user requirements
- Find trouble areas in the collection of library or in the cataloging process
- Observe high used objects

How Bibliomining Enhancing Services of Libraries?

- Find proper solutions in critical areas
- Arrange suitable policies with better match to needs of users
- Optimize the number of staff members
- Make more proper collection development decisions
- Justify their collection decisions to their funding

Conclusion

Reasons for the growing popularity of data mining in organizations like as libraries are

- Growing data volume
- limitations of human analysis
- low cost of machine learning

Conclusion

Finally

- Saving money
- Preparing more proper programs
- Gathering more details about users' requirements
- Becoming aware of lacks and power of library collection

Conclusion

- setting proper policies
- serving more efficient sources
- Better manage the issues which related to budgets, purchases, users, borrowing and staffing

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Thank you
for
listening!

