Chapter 3

Folksonomy-Based Information Retrieval by Generating Tag Cloud for Electronic Resources Management Industries and Suggestive Mechanism for Tagging Using Data Mining Techniques

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ABSTRACT

In the current scenario the amount of electronic resources are increasing rapidly. These resources are human readable and understandable. The industries which are managing these resources have various problems for their retrieval. In this chapter, the authors tried to propose folksonomy based information retrieval by generating tag cloud. This model not only helps the industries to manage their electronic resources for retrieval but helps them by providing suggestions for tagging with the usage of similarity metrics. This suggestive mechanism also helps users to understand resources at specific and organizations at general. The authors also have implemented the model to demonstrate the experimental results followed by discussion.

INTRODUCTION

In the current scenario of growth of Information and Communication Technology (ICT), the electronic resources are increasing at dramatic speed. With respect to Electronic Resources Management Industries, they are managing quite sensitive documents of various categories like Finance, Aerospace, Legal, Educational, Administrative, etc. They are providing on-demand services to their clients for Electronic Resources stored in repositories. This industry is required to have setup of sophisticated hardware and software to serve their clients round the clock. They are having certain problems with respect to managing and retrieving electronic resources like – (i) documents may be confidential in nature so the content could not be mined, which leads to difficulty in identification of the resource, (ii) historical documents which needs to be accessed, (iii) the user is not aware of the nomenclature of the documents, etc.

Tags are the strings. Attaching tags to various electronic resources by users or clients themselves will not only help them locate the electronic resources but also help them for quick retrieval. These tags are added by users themselves hence also referred as Folksonmy. As they are added by users, it is easy to recollect them. The system also helps users to get acquainted with the environment and nomenclature.

Authors also generate a tag cloud based representation of the tags, added by users, to search the electronic resources easily. Tag cloud is a well-known representation technique which represents tags in various sizes based on their frequencies. For example, a tag cloud representing population of countries would have a CHINA with the highest font size, followed by INDIA and so on. Authors also incorporated recursive generation tag cloud which is easily accessible to users and let users to search generic to specific electronic resources on the web.

From the previously attached tags and their various properties like frequencies, usage data, relation, etc. a suggestive mechanism for tags is also proposed. This mechanism will merge related tags by usage of Similarity Metrics. The Similarity Metric is a way to identify similarity between two streams. And based on merging and past data users will be having suggestions of tags using data mining techniques. This system helps the users to understand the environment.

All the above will improve the information retrieval in the specific industries and help them to achieve competitive advantage by serving their clients efficiently and timely manner.

Chapter Overview

The chapter starts with the introduction of the topic. After the introduction, back ground information is presented in the next section, which consists of various related information like folksonomy, similarity metrics, social bookmarking and its uses, and related work. In the succeeding section, main focus of chapter is elaborated. It consists of methodology and model, implementation, experimental results and discussion, applications, and limitations of the model. Finally chapter ended with future directions of research, conclusion and references. Required appendices are added at the end of the chapter.

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