Virtual Animation Studio using Inductive Logic Programming and a Searching Algorithm based on Rabin-Karp for Efficient Data Retrieval

Raseshwari Pulle
8/28, Vishwas Nivas, Parel, Mumbai-12.

Aparna Girme
Hadapsar, Pune.

ABSTRACT

This project deals with making an Virtual animation Studio such that it will provide an option of self-employment to budding animators. The website will allow the artists to become members free of charge, by filling up a form with some basic details like name, date of birth, username, password, street address, country, state, city & email address. After becoming a member an artist has to submit his showreel and resume. Based on this information the Virtual Studio team will give him star ratings. These ratings will help to ensure the complexity of work he can handle. Once they request the job, the job button is shown as engaged until he finishes his work or exits from it unfinished.

This system will be using an algorithm based on Rabin-Karp for efficient data retrieval and will also be using Inductive Logic Programming.

Keywords

Data Retrieval, Inductive logic programming, Recognizing Database Integrity Violation, Set theory.

1. INTRODUCTION

Animation in India is not very famous so this system It will provide a platform to encourage budding animators by providing them with a means of earning i.e. self-employment. Also this project will deal with efficient and faster data retrieval techniques along with Inductive Logic Programming. This project will also look after database integrity violation.

This project is designing a web portal such wherein different producers can provide tasks to budding artists. The artists can do things like apply for the job, search for the job, upload his resume, give ratings. The purpose of the project is to develop an interactive environment for generating job for budding artists.

User classes and characteristics
Users of the system:
1. Artist : An artist can apply for new tasks.He can view other artist's task and rate them.An artist can also upload his showreel.
2. Producer: Every producer can generate the job. The producers can be differentiated by the timespan in which they want their tasks to be completed.
   The producer can assign job to an artist and also view and rate the work done by the artists

2. MATHEMATICAL MODEL

The standard methods applied use decision tree and attribute value learning which are incapable of handling hyperlinking of web pages.

Inductive logic programming: Method to represent web structure and discover useful knowledge from web.

- Web Intelligence: It explores the fundamental and practical impacts of artificial intelligence on web and internet.
- Predictive ILP: find hypothesis which classify given and unseen examples correctly.
- Descriptive ILP: aims to find regularities from set of unclassified examples.
- ILP and Web Content Mining: It is used to implement web information i.e.to extract interested pieces of information and to classify the web document into specific categories.
- ILP and Web Structure Mining: It deals with discovering the model underlying the link structures of the web.
- ILP and Web Usage/Log Mining: Use web pages and web paths that a visitor has visited and discover the usage pattern.

The ILP can be applied to get this by dividing the problem into two parts:

1. Problem definition: translate the targeted predicate and background knowledge into the format for ILP system.
2. Generate rules i.e. facts to above targeted predicate and background knowledge by using ILP system.
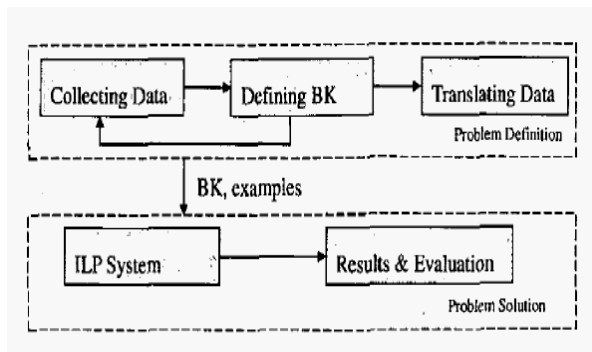
Rabin-Karp method for searchin algorithm:

1. This algorithm deals with finding an efficient hash value for faster data retrieval.
2. Rolling hash function: Obtaining hash value of next string from previous by doing only constant number of operations, independent of the substrings length.
3. Rabin-Karp algorithm exploits the fact that if two strings are equal their hash value is equal too. It computes hash value of substring we are searching for and then search for substring having same hash value.

2.1 Problems with Rabin-Karp:

1. When there are many strings to keep hash value small assign some strings the same value.
2. Because of this even if the hash values match the string value might not match. This increases an additional level of checking after the strings initially match.

2.2 Proposed searching algorithm for data retrieval based on Rabin Karp method :

1. Obtain LSB using bitwise operators then using rolling hash technique (from Rabin-Karp) a binary sequence can be got and used as fingerprints of the string. This gives every string an unique hash key value and two different keys will not give the same hash address.

2.3 Recognizing Database Integrity Violation

1. Non Deterministic Finite Automata
2. Set Theory

3. FEATURES OF THE APPLICATION
The system deals with providing new artists with tasks thus generating self- employment and these tasks are uploaded and assigned by the producers who are also the users of this system.

Stimulus/Response Sequences
If the user (artist/producer) enters wrong password it acts as stimulus and generates a response which asks the user to retype the password and user name.

When a job is assigned to an artist in response the status of the job is changed from available to engaged.

Functional Requirements

REQ-1: Availability of Web Servers.

REQ-2: Valid user access only to the system.

4. ADVANTAGES OF THE APPLICATION
Low level services are already implemented:

1. An enterprise application needs to implement very complex services to be successful. Some of those services are transaction and state management, resource pooling and multi-threading. J2EE architecture separates those low level services from the application logic. Since all those services are implemented by applications servers, you can save a lot of time if you need those services.
2. J2EE is well documented and understood: J2EE is developed by a consortium formed by several major companies in the industry.
3. APIs used in J2EE are well documented. Several APIs are used to implement low level details of enterprise applications. Since those APIs are already written and well documented, this will save you a lot of time.
4. MySQL: It is an open-source software and is affordable. It gives better performance mainly due to the format of its default table.

5. SYSTEM IMPLEMENTATION PLAN
J2EE: Stands for Java 2 Enterprise Edition. It offers high performance, flexibility and focuses on strategizing and executing business logic. Under this techniques like JSP, Servlets will be used.

JSP: Java Server pages. These will be used for handling the dynamic representation of user interface.

Servlets: A Servlet is a Java class in Java EE that conforms to the Java Servlet API, a protocol by which a Java class may respond to HTTP requests. Servlet is used to add dynamic content to a Web server using the Java platform.

MySQL: MySQL is a relational database management system (RDBMS) that runs as a server providing multi-user access to a number of database.

6. CONCLUSION
This paper has presented an Web application for Animation Firms and Budding Animators. Our intention is to create an Website which will try to provide a Job Opportunities for Animators for Producers to get there work done Smoothly

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