

Alumni Info-Com with Distinct Classification of Data using Support Vector Machine Algorithm

R. Sasikumar, B. Haritha, T. Borshiya Vincy, M.Kamali, S. Deva Priya

Abstract: *This paper presents to create a centralized alumni network for betterment of institutions and upcoming student's community. The System is able to collect and store alumni information for future communication. Former students of institution can communicate with their immediate friends as well as forthcoming students and various members involved in the institution community. Apart from the alumni, the institutions/organization also benefitted when sustains this network. This single system can satisfy almost every requirement of the alumni. Usually, alumni associations are organized in colleges, but may also be organized in a place where the alumni can meet each other. Despite the fact that there are many existing systems in colleges to maintain the alumni information, they are manual and more time consuming to current students to reach out their alumni and maintaining the privacy of the alumni. To overcome these issues, we proposed a web based application which allows alumni to update their information and students can connect with them and can view the filtered events posted by alumni and admin through Support Vector Machine algorithm (SVM). Proposed method, SVM algorithm used to classify the alumni members and their posting message from others in this community.*

Keywords: *Alumni management System, Random Number generator, Supervised machine learning algorithm, Classification, Support Vector Machine Algorithm*

I. INTRODUCTION

Data mining is a process of extracting knowledge or patterns from large dataset in our databases. There are various techniques that have been used to discover such kind of knowledge, most of them resulting from machine learning and information. Data mining is technique, used for separate needed information or data from huge set of information [9]. Main aim of this field is to draw out valuable information with help of database system, machine learning and analytics technique for future use. The major part of these methods concentrates on the disclosure of accurate knowledge. This knowledge is useful only if it removes unwanted information to the end user. Data mining and machine learning algorithms are implemented to reduce the consumption of time.

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The alumni involvement is the most important part of an educational institute or a foundation. A portion of esteem of a college rests on its Alma Mater. After the students completing their education, they begin their voyage in the corporate world. Reuniting with their friends in the college has been a very significant part of their memory. Alumni web portals are not only for bridging a path between alumni with their friends and college. It is also necessary for lending the helping hand to the currently studying students to improve their knowledge. In this modern era, students should equip themselves with lots of knowledge. Students should connect with their alumni to update themselves with recent trends and explore the career opportunities. These exploring career opportunities are also for the alumni. Because some may not be employed or some may wants to switch their career.

II. RELATED WORK

In this section explained about, existing methodologies for managing alumni information and interaction among the alumni members with institution/Organization. The author "**Silvia Quarteroni**" proposed a method called dialogue interface [2]. In this approach any one can ask query through UI, depending upon the question will redirect to particular members on this community. Also author use chat bots for interactive session. The author "**N. Dahlbaeck**" provides features such as, lecture details, news, events and notice [3]. This approach affords the opportunity for the alumni members to donate to the institution. In this paper, author proposes a unique feature of embedded video on homepage.

"**Princeton University Alumni Association**", through this portal has provided facilities for current students [5]; they can resolve their difficulties by getting feedback from passed out students. Also in this paper describe region based students classifications. This approach can help the individuals who are not well other than district language. It incentivizes those types of student's interaction with alumni members. "**Takashi Onoda**" et al. Applied active learning techniques for surveying successive batches based on Support Vector Machine, which is called relevance feedback [9]. The proposed method has good effect on document retrieval using relevance feedback evidently. "**Sasiporn Tongman**" et al. proposed classification method on text. This approach classifies Positive words and negative words then stored into the database [12]. After that, best accurate result will be predicted using KNN algorithm.

III. PROPOSED WORK

This division comprises of four sub-divisions. First, section describes about the overall flow of alumni management system. Second, describes about usage of random number, which type of cryptography algorithm used to generate random number. Third, in this section describes about, Supervised Machine learning algorithm. Fourth section illustrate about present methodologies and limitations.

a) Alumni Management System

In the existing methods, alumni management systems concentrated only the alumni members [14]. This system is useful for the organization and student community. But the limitation with this method is, student cannot directly interact with alumni members, rather they can interact through organization members.

Various kinds of events will be organized by the college such as conferences, workshops, competitions, value added trainings and placement drives. Through this application, alumni can know information about all these events in the college. Through this web application, students can be raised their queries related about particular activities to their super batch members. Based on the queries received, alumni network members can post their previous year positive or negative feedbacks, their recommendations to particular events, or current trends about outside the institutions/organizations. For example, while college planning to organize value added course for the upcoming placement students, they can post their course plan on the proposed application forum. This information will be communicating to all the alumni members who are all working under the particular domain in the industry. So they can represent their point of view, because they are currently working in the industry.

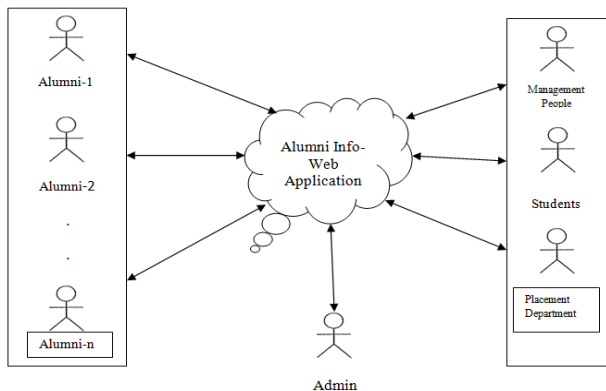


Figure-1: Alumni interaction with institution/ Organization

Figure-1 shows the overall communication methods in the proposed web application. In the Existing methods, Administrator of the site or Application and alumni members can update their details, and related to any events organized in the organization can be post only when they are inside the organization. This problem has been overcome in proposed system that users can update the details from anywhere in this world. Our web application implements a feature that allows alumni and students to restrict their views of posts in the forum using support vector machine algorithm it has added extra features to provide more privacy to alumni information. The system completed in two steps. First, data to be gathered from doing last

semester batch before leaving the institution/organization. The second step of development will extend the functionality of the system to allow alumni to register by verifying with the details collected in the first step with help of session key management. During registration phase, their information will be validated based on their details available with us. Here, Random number generator mechanism is used for one time verification of alumni information.

b) Random Number Generator

Random number is a number generated by hardware or software. In this paper, we have generating a random number with help of cryptography algorithm to secure and authenticate the alumni registration process. Random number has been generated with help of cryptography algorithm called Pseudorandom Number Generator (PRN).

$$N_{x+1} = (aN_x + b) \bmod m.$$

Where $x+1$ denotes the next random number, to increase the highest security of the number, a and b are selected from the list of prime numbers. ' m ' denotes the max number of modules value. Normally prime number used to increase the level of security in any of the cryptographic algorithms.

c) Supervised Machine Learning Algorithm

In this section explain about supervised machine learning algorithm. Name itself describe about the concept of supervised machine learning algorithms. Supervised learning which is nothing but know data set or trained data set. Here data set can be divided into two categories. First, 20% to 30% data can be used for training the algorithm. Remaining data can be used for testing or predicting the result based on the first data set. The purpose of using this algorithm in this application is, based on the alumni information future trends of job opportunities and what type of training is necessary for the current students can be predict.

Here Support vector machine model has been used to predict the necessary action to be taken by organization /institution for the betterment of students. This model uses the concept of classification and linear regression analysis. Classification used for training and generating the model based on available data set. With help of classification, linear regression analysis predicts the future scope of the students. For example consider the following scenarios; Software companies are moving towards data scientist's profession opportunities from the application developer [15]. Now the students are must be well prepared to grab this opportunities only when they are ready for this. So with help of current scenarios given by the alumni students this support vector model can predict what type of training is necessary for current students and also how long this current trend will go. This will help the students for predicting the job opportunities.

d) Existing System with Limitations

The present or existing systems are both manual and computerized. The conventional process is to store alumni and current students' details in ledgers. This will be maintained by each department. So, there is no centralized database. It requires the college to collate all the details of the alumni and maintain it.

As it is all about maintaining ledgers, it will consume more space. Another method of computerized is to store the students' information in the excel sheets. It is also same as of manual process except that details entered in ledgers are replaced by excel sheets which will be maintained in the computer without consuming external space in college [10]. It makes advantage of accessing the information at anytime. Searching and accessing a particular student record will be somewhat easier in excel sheets than manual one.

Developing from these and all now some colleges maintain a web portal which maintains alumni information. In addition to that it bridges a path a between alumni and currently studying students by providing a forum between them. These portals allow the admin only to post events related to their colleges and other colleges. These forums are public and any members of this portal can see [7].

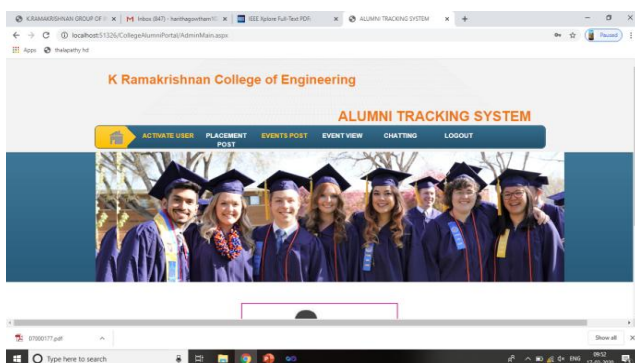
Limitations:

- The conventional method leads to more time and space consuming.
- Tedious process to collect and keep updating the alumni details.
- Difficult to maintain the historical data.
- Difficult to search a particular record
- Web portals have lack of privacy issues.
- Data leads to inconsistency and redundancy.

e) Work flow of Proposed method

The proposed Alumni Info-Com Management with Distinct Classification of Data is discussed in with a system architecture Figure.3. The role of each participant is listed as follows.

- **Admin Mode-** The admin is a person who manages the whole system. Once alumni are registered, admin should activate their account after verification. Admin can also post events related to placements, workshops, conferences etc. of both our college and other colleges. They can send important messages to both alumni and current students.



- **Support vector machine classification algorithm** – svm algorithm classifies the view of both placement and other events' posts to the alumni and current students based on their department given during registration
- **Alumni Mode** – Alumni student is the one who is passed out from the college. After registration by filling some details of their own, alumni can make use of the available features. Employed alumni can post events related to placement, internships etc in their companies or which they came to know. Non-employed alumni can share their skills and knowledge with other alumni and current students. They can also view the events posted by others, related to their department which are filtered by support

vector machine algorithm. They can search their friends and can have a healthy chats between them.

Figure 2. Alumni Registration Form

Current student Mode- Current student is the student who is currently studying in the college. After registration, they can search their alumni on the basis of name, batch or department. They can see certain details of alumni. They can chat with them to clear their doubts regarding education. They can view the placements and other events' posts. Support vector machine algorithm filters the events to that student according to their department.

SYSTEMARCHITECTURE

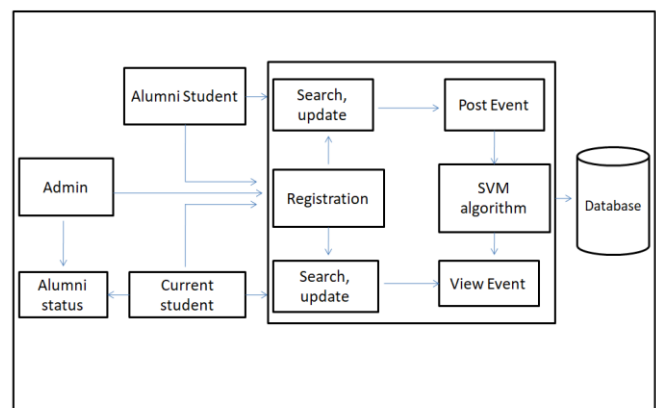


Figure 3. Proposed System Architecture

Algorithm: Support Vector Machine Classification

SVM algorithm is a supervised learning model with associated learning algorithms that analyze data used for classification. SVM segregates the classes of information by finding the hyper plane. SVMs has proclaimed the ability not just too precisely segregate elements into right classes, additionally to recognize case whose raised up arrangement is not verified by information. It is just reached out numerical figuring's.

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Two such expansions, the first is to extend SVM relapse examination, with the objective to deliver a direct capacity that can obtain that objective capacity. An additional expansion is to figure out how to rank components as opposed to creating a characterization for individual components.

Algorithm for SVM:

Case and delivering a +1 assess if the combine is in the right positioning request not withstanding -1 generally.

Step1: Select post = {closest department of opp class}

Step2: while there are department based placement and event do

Step3: Find a placement details

Step4: $alumnistudent = alumnistudent \cup department$

Step5: if any $z < 0$ due to addition of c to s then

Step6: $alumnistudent = alumnistudent/p$

Step7: repeat till all such points are pruned

Step8: End of if

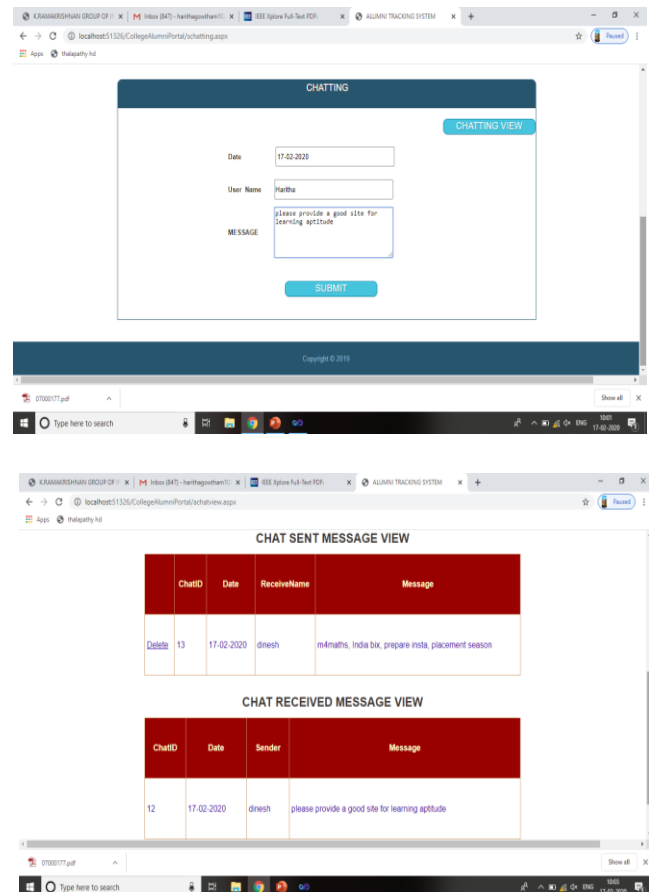
Step9: End of while.

IV. EXPERIMENTAL RESULTS

In this system, we apply the method to classify the placement and event posts to the alumni and the current students during their sight based on their department. Admin can see all departments' related posts which are sent and received by him. Current students search and chat with alumni to have a good future in technical world. Alumni can also search their college mates to increase their circle or to develop in their field. Non-employed alumni can get a good job through the placements posts in this application. Admin should verify and then activate the alumni. Admin should monitor the system actively and have a proper maintenance over it. Here, we are using support vector machine for classification. When comparing to other classification algorithms it classifies quickly and produce results without dumping of unrelated information.

PLACEMENT CELL VIEW									
	ID	PlacementName	InterviewDate	Address	MoreDetails	Phone	Placed	Department	Data
Download	1001	czscsd	2/4/2020	dsdscfs	dsdscfs	dsdscfs	OnCampus	CSE	Desert.jpg
Download	1001	czscsd	2/4/2020	dsdscfs	dsdscfs	dsdscfs	OnCampus	CSE	Desert.jpg
Download	1001	zxczxc	2/4/2020	12 Anna Nagar	zxczxc	45345345	OnCampus	CSE	Koala.jpg
Download	1002	Tcs Software developer	1/28/2020	Chennai	JAWA.NET	7878451245	Off Campus	CSE	Chrysanthemum.jpg
Download	1003	java developer	2/13/2020	chennai	fgtshfgtshfgtsh	98984545454	OnCampus	CSE	Jellyfish.jpg
Download	1004	hghghgh	2/11/2020	hghgh	hghgh	hghgh	OnCampus	CSE	Penguins.jpg
Download	1005	Software testing	2/13/2020	With in campus	batch 2014-2020	7878451215	OnCampus	CSE	Penguins.jpg
Download	1006	hvf	2/20/2020	hvf	hvf	9536278291	Off Campus	CSE	untitled.png
Download	1007	hvf	2/20/2020	hvf	hvf	9536278291	Off Campus	CSE	IMGSRM.jpg
Download	1008	Mrs. Object Frontier Software	2/20/2020	saddf	Venue: Caverani Auditorium Timing: 9:00 a.m	9536278291	Off Campus	CSE	IMGSRM.jpg
Download	1009	Wpro	2/29/2020	SRM college, Tiruch	Venue: Caverani auditorium Time: 9:00	97437148332	Off Campus	ECE	IMGSRM.jpg

ALUMNI USER:Haritha [CSE]									
PLACEMENT CELL VIEW									
	ID	PlacementName	InterviewDate	Address	MoreDetails	Phone	Placed	Department	Data
Download	1001	czscsd	2/4/2020	dsdscfs	dsdscfs	dsdscfs	OnCampus	CSE	Desert.jpg
Download	1001	czscsd	2/4/2020	dsdscfs	dsdscfs	dsdscfs	OnCampus	CSE	Desert.jpg
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Download	1003	java developer	2/13/2020	chennai	fgtshfgtshfgtsh	98984545454	OnCampus	CSE	Jellyfish.jpg
Download	1004	hghghgh	2/11/2020	hghgh	hghgh	hghgh	OnCampus	CSE	Penguins.jpg



V. CONCLUSION

Alumni portal for any college website is very vital of all alumni. With help of Alumni portal implementation, can establish relationship among alumni and organization, become better information sharing and networking among the alumni members. The main objective of this proposal is to enhance the communication among Organization/ Institution, currently doing courses in the institution and alumni members through this web based portal. By using this system a great interaction can be maintained among alumni and with the college and the students. A good networking can be developed in between the current student and alumni, by using this system the student can clear there doubt in any area, The Alumni student can share their knowledge, materials everything through this application. The department can get any information about alumni easily by using this system, in case of any urgent need. Finally, it helps to improve overall organization, improve current student's activity both academic and non academic and placement with reputed companies with higher salary package.

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