ANDROID BASED TRAINING AND PLACEMENT AUTOMATION

Tejashri Gosavi, Shraddha Gaikwad, Rohit Nazirkar, Amol Salke
Department of Computer Engineering, JSPM’s ICOER, Wagholi, Pune, India

Abstract: Android based training and placement automation for campus drive is a System, which automates training and placement activities and provides opportunities to the students, who are eligible according to the company criteria and makes easy the process of managing information regarding students and companies automatically. This system focuses on the automation of the training and placement cell and profile matching. Collecting the resumes, providing notifications about various job openings to the students according to the eligibility and company criteria, managing and inviting the companies for the campus recruitment, classifying the data from the resume submitted by students and creating the recruitment metrics, observing and controlling the progress of the selection process and communicating with different eligible candidates via SMS or email notification. The eligible candidates are classified according to company criteria by using Mahout’s Naïve Bayes Classification algorithm. For accessing the data on android platform we are using JSON technique that is Java Script Object Notation. This system provides the modules like user interface for Student (Current Student/ pass out) developed on android platform, user interface for Administrator (TPO/ TnP Staff) developed on desktop, Classification module, Company and Forum. It manages recruitment process of each Job posting on the basis of each individual resume. Provides various functionalities like managing student resume, Company Profiles, Job Postings, Authentication and activation of student profiles, Send Notifications to students via SMS or email, listing out the students as per company's criteria, provides the list of shortlisted student with resume to company. This system reduces the human efforts and maintaining large amount of data efficiently.

Keywords: Curriculum Vitae (CV), Information Technology (IT), Short Message Service (SMS), Training and Placement (TnP), Training and Placement Officer (TPO)

1. INTRODUCTION

Modern technologies have given various ways for making advances in different fields. Recent examples of these are computers and laptops which can do any complex work easily. Now-a-days, communication network is getting spread worldwide rapidly and thus it came up with information security and data assurance issues. Due to widespread of communication technologies over global network large amount of data is generated and
handling, maintaining such a huge amount of data is a major concern today. As world is moving towards technological development, this development has took place in Information Technology field on large scale. Such development constitute of web application which reduced human effort and helped in day-to-day life. Some of these applications are for entertainment purpose, some are developed to reduce complexity of a task, some are used for automation of manual work and some are used to reduce human efforts. Automation is of major importance in IT development; recently various applications are developed to automate the manual working of system. Automation of manual working of system is advantageous since automation provides faster execution of work then manually working system and errors are also reduced. Since, in manually working system human efforts are included which may cause errors and reduce the speed. Thus, many advantages are provided by automated system and use of this system is being made in various streams like colleges, coaching institutes, companies, universities, etc.

The increasing advantages of automated system now are at highest position thus many manual processes are automated. Since the automated system is demanded now-a-days, educational infrastructures like colleges needed their manual system to function on computer system. One of such system which is of major importance is training and placement automation for campus recruitment. Though some manual functioning systems of colleges are automated like maintaining attendance record, library management. The colleges have more to do like monitoring and maintaining student’s presence in the campus, which important information for their parents or guardians.

This project has major goal that is fulfilling the requirements of TnP officer, students and company visiting to campus for recruitment. This system will allow automation of manual process of TnP carried out in various colleges today. Input to the system is student resume uploaded by students and output is notification to eligible students via SMS. It provides with options like sign in already registered users and sign up for new users. Authentic user can upload their resume for campus recruitment. Resume data is classified by using classification algorithm. Classified data is matched with company criteria and notification to eligible candidates is sent via SMS. Thus automation of all training and placement process is done resulting in reduced human error prone system, proper management of huge data and provided with speed in execution of TnP process.

2. LITERATURE SURVEY

Short Message Service (SMS) is used in mobile communication system as a text messaging service, on which some standard communication protocols are applied for exchange of short text between two mobiles. In this system, we will SMS for sending notification to the eligible candidates. System that will facilitate faster and easier automate the placement procedure. For classifying the large amount of data there are different algorithms available we are using mahout's classification algorithm. There are many classification algorithms provided by mahout such as

- **Logistic regression:** In statistics, logistic regression, or legit regression, or logit model [1] is a type of probabilistic statistical classification model [2]. It is also used to predict a binary response from a binary predictor, used for predicting the outcome of a categorical dependent variable (i.e., a class label) based on one or more predictor variables (features). That is, it is used in estimating the parameters of a qualitative
response model [3]. The probabilities describing the possible outcomes of a single trial are modeled, as a function of the explanatory (predictor) variables, using a logistic function. Logistic regression measures the relationship between the categorical dependent variable and one or more independent variables, which are usually (but not necessarily) continuous, by using probability scores as the predicted values of the dependent variable. Logistic regression can be seen as a special case of generalized linear model and thus analogous to linear regression. The model of logistic Regression, however, is based on quite different assumptions (about the relationship between dependent and independent variables) from those of linear regression.

- **Naïve Bayes classifier:** By using Mahout Implementation of the Naive Bayes algorithm to build a document categorizer. The Naive Bayes algorithm is a probabilistic classification algorithm. It makes its decisions about which class to assign to an input document using probabilities derived from training data. The training process analyzes the relationship between words in the training documents and categories, and then categories and the entire training set. The available facts are collected using calculations based on Bayes' Theorem to produce the probability that a collection of words (a document) belongs in a certain class.

- **Hidden Markov model:** A hidden Markov model (HMM) is a statistical Markov model in which the system being modeled is assumed to be a Markov process with unobserved (hidden) states. An HMM can be presented as the simplest dynamic Bayesian network. In simpler Markov models (like a Markov chain), the state is directly visible to the observer, and therefore the state transition probabilities are the only parameters. In a hidden Markov model, the state is not directly visible, but output, dependent on the state, is visible. Each state has a probability distribution over the possible output tokens. Therefore the sequence of tokens generated by an HMM gives some information about the sequence of states. Note that the adjective 'hidden' refers to the state sequence through which the model passes, not to the parameters of the model; The model is still referred to as a ‘hidden’ Markov model even if these parameters are known exactly. Hidden Markov models are especially known for their application in temporal pattern recognition such speech, handwriting, gesture recognition, [4] part-of-speech tagging, musical score Following, [5] partial discharges [6] and bioinformatics.

3. **EXISTING SYSTEM**


The existing training and placement cell was not so convenient because of lots of work manual work. All the work that is done by manually and today’s day it is done by human intervention. In existing system all the work is done by manually, so there were maximum chances of errors. The interface between the student and administer is maximum. Due to the above problems every procedure becomes time consuming. The data were stored in Excel sheet hence it's occurred searching problems. Also the updating was very difficult. The students were not being made aware of the TnP activity hence there have been loss of opportunities. There were fewer interfaces between student and TnP department. There was
no record kept of the past students. There was less communication between past or present student with the TnP department.

4. PROPOSED METHODOLOGY

In existing system, everything is carried out manually and all data is maintained in excel sheet. Maintaining and managing data is difficult task. TPO needs to refer all the documentation maintained for further working and keep the document updated. This is time and money consuming. To overcome these drawbacks of existing system, the proposed system will be developed. Proposed system will provide easy retrieval and updating of data for TPO and easy uploading and updating of data for student. Once you open this android application, you will get the options like login further categorized as sign in and sign up, upload CV, digital resources, feedback and forum which is user interface provided for students. TPO user interface is also provided in this android application having option as admin login. There are three types of users they are students, training and placement officer (TPO) and company representative. The administrator has all the priorities and authorities regarding updating and approvals. The administration can view and approve the CVs. Students are categorized further as current students and pass out students. Students can view and update their CVs. Students which are eligible according to company’s criteria are sent notification regarding company’s arrival and rounds to be conducted by SMS or E-mail notification. Students can access and use the relevant digital resources provided online for them, consisting of question bank of already asked questions. Students can interact with TPO and other students with help of online forums. Students can ask their queries on forums and TPO and other students can answer their queries. Administrator is categorized as two users TPO and Company representative. Each user has different authorities and responsibilities. TPO can access the information of students. Classification of eligible student is done by using mahout’s naïve bayes classification algorithm and shortlisted students are sent notification by SMS or E-mail.

Fig. 1: System Architectural Model

When TPO logins he can see various companies and vacancies. TPO can view student CVs and has responsibility of verifying the students according to eligibility criteria of company. TPO can search any information required since TPO is provided with some authorities. Company representative have the authority to view the student CVs and provide their
company criteria. For the first time company has to get registered and they need to provide their contact details and website URL. They need to keep contact details and website information updating constantly. The proposed system has intention to overcome drawbacks of existing system and adding new features. The proposed system every manual work of existing system is automated in cost effective way.

- **Naïve Bayes Classification Method:** The naïve bayes classifier technique is based on the bayesian theorem. It is particularly used when dimensionally of the input is high. Naïve Bayes can often more sophisticated classification method. First step of the naïve bayes classifier is to classify the objects and to classify new cases as they arrive that means to decide to which class label they belongs based on the currently existing system. Then on the priority basis the bayesian analysis is done. The final classification is produced by combining all the information gathered by bayesian analysis.

5. CONCLUSION

After the system has been studied, designed, developed and tested. The following conclusions were created. The Developed system can guarantee to keep the records are safe and privacy which is stored in database. In placement system there are many problems to maintain, searching, sorting the entire huge data. The system is provide solutions such as automates the placement procedure for any college. Using Mahout’s Naïve Bayes classification algorithm, it converts and classifies the unstructured data into structured and sorted format. Pattern matching techniques are applied on the data. The Developed system was evaluated, tested, it performs well functional, reliable it very helpful to students to get an alert by the massage on the cell phone.

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REFERENCES


[2] Christopher M. Bishop (2006). Pattern Recognition and Machine Learning. Springer. p. 205. "In the terminology of statistics, this model is known as logistic regression, although it should be emphasized that it is a model for classification rather than regression."


