

A Review: Placement Prediction using Machine Learning

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Abstract— Engineering students are skeptical about what they want to pursue after graduation. Students studying in engineering colleges feel the exigency to know where they stand in comparison to others, and what kind of placement they would get. When a student enters final year, the T&P offices comes but they are of no use to a student planning for future studies. Prediction about the student's performance is an integral part of an education system, as the overall growth of the student is directly proportional to the success rate of the students in their examinations and extra-curricular activities. Therefore, there are many situations where the performance of the student needs to be predicted, for example, in identifying weak performing students and taking actions for their betterment. The students having no platform to check current position and build their strengths. To achieve a better accuracy and a system that learns with every wrong prediction it has made, we intend to use Machine Learning and here we use two different machine learning classification algorithms, namely Naive Bayes Classifier and KNearest Neighbors [KNN] algorithm which will cause a continuous accuracy growth. We want to develop such system which student can use to know their current status using this web application. To ensure effective results, the model will be trained on a real data set and a vast number of qualitative as well as quantitative parameters will be considered.

Keywords: Machine Learning, Placement, K-Nearest Neighbours [KNN], Naive Bayes

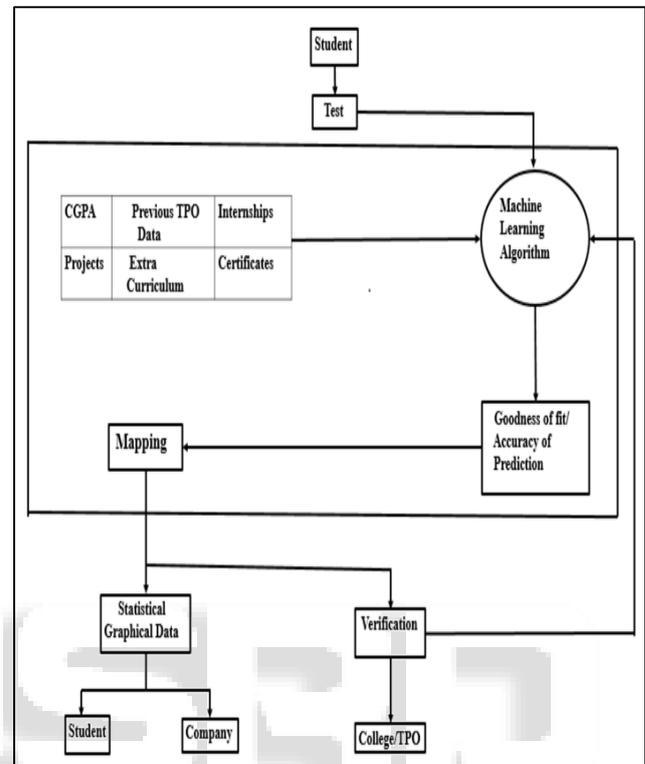
I. INTRODUCTION

Campus placement of a student plays a very important role in a college. Campus placement is a process where companies visit colleges and identify students who are talented and qualified, before they complete their graduation. Therefore, finding patterns and characteristics in this large pool of data, will help find parameters that are the most important for this placement procedure.

The prediction of engineering students, about where they can be placed, from the second year and onwards, will help to improve efforts of student for proper progress. It will help teachers to take proper attention towards the progress of the student during the course of time. It will help to build reputation of the institute for having such a sophisticated system in place which helps the students to train and practice for campus placements. The present study concentrates on helping the students, bridging the gap between the industry and the curriculum, and showing them the path to a better future. We apply data mining and machine learning algorithms, in order to interpret the potential of the student.

A high placement rate is the key of building the reputation of an educational institute. Hence such system is very useful in higher learning institutes. By getting efficient and accurate result we use the Naive Bayes and K Nearest Neighbour [KNN] algorithms.

II. SYSTEM ARCHITECTURE



III. LITERATURE SURVEY

In the proposed system[1] In this paper, we propose a Placement Prediction System which predicts the probability of a undergrad student getting placed in an IT company by applying the machine learning model of k-nearest neighbors's classification.

In the proposed system[2] This paper presents a recommendation system that predicts whether the current student will be placed or not, if the student is placed the company is also predicted based on the data of previously placed students.

In the proposed system[3] This paper presents the development of placement predictor system (PPS) using logistic regression model. Based on the student scores in matriculation, senior secondary, subjects in various semesters of technical education and demographics, PPS predicts the placement of a student in upcoming recruitment session.

In the proposed system[4] We have met the objectives, which is to predict the placement status the students in Btech are most likely to have at the end of their final year placements.

In the proposed system[5] In this paper, we present a learning-based methodology as well as the framework for closing the gap between global routing and detailed routing violations.

In the proposed system[6] In this paper, a method was developed for predicting the component self-alignment

within the liquid state of reflow soldering. The method is based on utilizing neural network as a predictor.

In the proposed system[7] The aim of the research is to develop a decision support system using machine learning strategies.

In the proposed system[8] In this paper, we proposed a VNF prediction model based on machine learning. We used TD-LSTM and improved prediction performance through context embedding, aspect embedding, and attention

In the proposed system[9] The predicted results are obtained from Python programming which is the emerging and fastest growing field of Data Science and shows its presence where the data storage grows on gigantic scale.

In the proposed system[10] In this paper, we presented a novel framework to characterize thermal behavior of a HPC system. We have evaluated various prediction models empirically and selected Gaussian process as the base of our model.

IV. HARDWARE REQUIREMENT

- 1GB of RAM
- Processor: i3 or Higher
- Internet Connection: 512 Kb/s or above.
- Screen Resolution: 1020 x 768 (or above)
- Disk Storage for Database : 10 GB

V. SOFTWARE REQUIREMENT

- Browser (preferably Chrome or Firefox)
- Operating System: Windows, Linux, OSX.
- Text Editor : Sublime / Visual Studio Code / Atom
- Development Environment: SQL, Node.JS, Python 3.0, PostgreSQL, Numpy, spyderPandas, Scikit-Learn, Plotly.js, Matplotlib, Seaborn

VI. ADVANTAGES

- Models have been trained on real dataset
- To solve the issue for training models a centralised database was created
- Result analysis easier
- College can get easy insights and generate graphs easier.
- By training multiple models we have identified the pros and cons of all the algorithms giving the freedom to find the best possible algorithm and leverage the best parts of all the algorithms.
- The model being trained on actual student data captures the anomalies in real scenario and adapts to it over time.
- Classification problem can be converted to a regression problem by predicting salaries instead of whether being placed or not thus gaining best of both worlds.

VII. APPLICATION

There are various applications of this system, few of them being

- 1) Student's will have an idea of where they stand and what to do next to bridge the gap and become better.
- 2) Student's will have a clear option which will help reduce the ambiguity in their mind.

- 3) The college will have the statistics of all the students and what are the different domains they fall into.
- 4) The college, will be able to take decisions to improve students and have better, insights of the students.
- 5) The student's will get their resume based on the data they feed.
- 6) The corporate end, will be able to filter the students and download the resumes of the students, according to their needs.
- 7) The corporate end and the college end will be able to post there, requirements and send messages directly to the student, or maybe even globally.
- 8) The corporate end there will be interview questions that will be prompted, different for different students based on the student resume.

VIII. CONCLUSIONS

As we have seen throughout our studies, that the problem statements we have approached are student, college, and corporate centric. The solution to all of these problem statements, is based on the model we are going to build, the output of which will be a number between 0-1, which will determine, the prediction of a student being placed. During this process, a lot of other dependent variables will be predicted which will help solve the problem statements. The expected outputs of the system for student end, is the prediction about their placement, and the statistics of how they can fair well. College end will have the analysis of every student, and will have the opportunity to focus more on the improvement of students. Also because of the system, the college will have one platform to manage the data of the students, thus solving another issue. The corporates will be able to apply filters, compare students, and download resume of the students they're interested in, also they will get student related questions that they can ask, in the interview.

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