

Campus Recruitment Prediction

Anupama P R, Nithin Sebastian



Abstract: For businesses and students alike, campus recruitment is an important occasion. While businesses aim to draw in the best employees, students eagerly anticipate beginning their professional careers. Salary prediction is a crucial component of college recruitment, when employers ascertain the wage ranges, they would offer prospective employees. Many criteria, including the candidate's qualifications, experience, and education, as well as the company's budget and industry norms, play a role in predicting the salary for campus recruitment. In this project, we'll apply machine learning approaches to forecast college recruitment salaries based on candidate historical data and salaries that match to those positions. In this project, we develop a predictive model for college recruitment by analysing the dataset that has been provided. Data processing and exploratory data analysis (EDA) are our initial steps. After that, we build a Flask web application that uses the trained predictive model to be deployed and lets users anticipate things based on input.

Keyword: Campus Recruitment Prediction, Ridge Regression, Model Selection.

I. INTRODUCTION

Campus recruitment is a crucial event for both students and companies. One key aspect of campus recruitment is salary prediction, where companies determine the salary. Many criteria, including the candidate's qualifications, experience, and education, as well as the company's budget and industry norms, play a role in predicting the salary for campus recruitment. By analyzing these parameters, a pay range for each candidate can be predicted, using machine learning algorithms. Also uses the candidate historical data and predict salaries that match to those positions. In the project we will use the Ridge regression method for salary prediction [6][7][8][9][10]. That includes data processing, exploratory data analysis (EDA), training and evaluation. There is a great deal of promise in using machine learning to forecast employee turnover. After that, a web application is built and by entering our data the salary prediction for the candidate is done. This can help firms use resources more wisely, develop retention plans that are specific to their needs, and create a more stable and productive work environment. Businesses may improve employee contentment, engagement, and overall work satisfaction by proactively addressing the underlying causes impacting attrition. By investigating different machine learning algorithms, this project aims to provide organizations with a prediction tool that can help.

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HR professionals and decision-makers not only plan effective retention strategies but also anticipate possible attrition. It does this by learning algorithms and techniques.

II. LITERATURE REVIEW

[1] Priyanka Shahane. "Campus Placements Prediction & Analysis using Machine Learning". 2022 International Conference on Emerging Smart Computing and Informatics (ESCI). March 2022. In this study, the target is to analyze student's placement data of last year and use it to determine the probability of campus placement of the present students. For this we have experimented with four different machine learning algorithms i.e. Logistic Regression, Decision Tree, K Nearest Neighbours and Random Forest.

[2] Tete, Prof Sagar. "Campus Recruitment Management (Online) System." *International Journal for Research in Applied Science and Engineering Technology* 9, no. VI (June 20, 2021): 1784–88. This study allows students to enroll their all details on to the system. Even it allows to company to post their job vacancy and all details about incoming drive. It is very beneficial for both the parties student & company to build strong communication. It make easier for placement officer to manage or access student information with respect to Placed student.

[3] Daprano, Corinne M., Megan L. Coyle, and Peter J. Titlebaum. "Student Employee Recruitment and Retention through Campus Partnerships." *Recreational Sports Journal* 29, no. 2 (November 2005): 108–16. This software system is designed on the basis of candidates, companies and training & Placement cell officers. In the project they are providing three logs in the registration option for students, company and college training & Placement cell officer. It allows students to enroll their all details on to the system. we are also provide one contact detail option facility for both parties through which user can easily post their queries.

[4] Prof. S.S. Kashid*1, Ashish Badgajar*2, Vishal Khairnar*3, Anurag Sagane*4, Nishant Ahire*5. "CAMPUS PLACEMENT PREDICTION SYSTEM USING MACHINE LEARNING". Volume:05/Issue:04/April-2023. to calculate the possibility of a student getting jobs in a company through campus placements. The model takes many parameters which can be used to get an idea about the skill level of the student. Some data includes academic performance, CGPA, pointers etc. Combining these data points, the model is to accurately predict if the student will or will not be placed in a company. This process includes the selection of tuples for training data and their preknown outcome often known as real data.

[5] Neelam Swaroopa, Pothuganti Manvitha. "Campus Placement Prediction Using Supervised Machine Learning Techniques",



Campus Recruitment Prediction

International Journal of Applied Engineering Research ISSN 0973-4562 Volume 14, Number 9 (2019) pp. 2188-2191. In this study, the objective is to analyse previous year's student's data and use it to predict the placement chance of the current students. This model is proposed with an algorithm to predict the same. Data pertaining to the study were collected from the same institution for which the placement prediction is done, and also suitable data pre-processing methods were applied. This proposed model is also compared with other traditional classification algorithms such as Decision tree and Random Forest with respect to accuracy, precision, and recall.

III. METHODS

The fundamental technique for predicting college recruiting using Ridge regression is to train a model of candidate profiles, corporate information, and wage data on a dataset. The candidate's details may include their gender, level of schooling, and any relevant experiences. By examining the aforementioned information, we may use ridge regression to estimate each candidate's pay. The most important stage in predicting a candidate's pay is gathering their data, which must also be correct. The following phases make up the process: prepping the data, choosing features, training the ridge regression model, evaluating the model, making predictions, deploying the model, and maintaining it.

IV. RESULTS AND DISCUSSION

A. Result and Discussion

In this project, we employed the campus recruitment prediction to develop a model for salary prediction in campus recruitment based on the candidates skills and historical data. Through undergoing various steps such as data uploading and by using the selected machine learning model the prediction is done. Ridge regression model gives the accuracy as compared to other machine learning models.

Model Name	Accuracy (%)
Ridge Regression	90
Linear Regression	87.66
Random Forest	86
Decision Tree	84

B. Challenges and Limitations

Although there are a number of difficulties and restrictions to take into account, such as feature selection, interpretability, model complexity, and handling categorical variables, using Ridge regression to predict college recruiting can be successful. It's critical to thoroughly preprocess the data, choose pertinent features, adjust the regularization parameter, and, if necessary, explore the use of more sophisticated modeling techniques in order to overcome these difficulties.

C. Future Enhancement

Prospective developments in the predictive power of Ridge regression for college recruitment may concentrate on enhancing the interpretability, scalability, and performance of the model. Feature engineering, model interpretability, ensemble methods, and handling missing data are a few possible avenues for improvement. By concentrating on these areas for improvement, you may use Ridge regression to

improve the performance, interpretability, and scalability of campus recruitment prediction models, which will ultimately lead to better recruiting process decision-making.

V. CONCLUSION

To sum up, the goal of the machine learning-based campus recruiting pay prediction project is to increase the efficacy and efficiency of the hiring process for both employers and candidates. The initiative aims to improve the recruitment process overall, expedite decision-making, and deliver precise wage estimates by utilizing predictive modeling and historical data. The research intends to predict the relationship between candidate profiles, corporate information, and wage offers using methods such as gradient boosting regression, random forest regression, decision tree regression, and linear regression. All things considered, the research highlights how valuable machine learning is for refining hiring procedures, strengthening candidate-company matches, and ultimately helping both firms and applicants succeed in the hiring process.

DECLARATION STATEMENT

Funding	No, I did not receive
Conflicts of Interest	No conflicts of interest to the best of our knowledge.
Ethical Approval and Consent to Participate	No, the article does not require ethical approval and consent to participate with evidence.
Availability of Data and Material	Yes, It is relevant. The dataset used for this project was Kaggle is an openly available corpus.
Authors Contributions	Each author has made an independent contribution to the article. The individual contributions of each author are presented below for clarity and transparency. Anupama P R is the main contributor and Mr. Nithin Sebastian is the project guide.

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AUTHORS PROFILE



Anupama P R, currently pursuing Master of Science in Computer Science from the prestigious St. Albert's College (Autonomous), Ernakulam. Prior to this she had completed his Bachelor of Science degree in Computer Science from SSM College, Rajakkad. Her area of interests includes prominent fields like IoT, Networking, Artificial Intelligence. She is given attention to details as well as she is able to think outside the box, she loves to solve problems and has been keenly observing the latest technology. When she is not studying or working on new projects, she enjoys to travel, photography and explores the nature. She is an active member of the Computer Science community and coordinates in various events conducted.



Mr. Nithin Sebastian, he joined Department of Computer Science of the prestigious college, St. Albert's College (Autonomous), Ernakulam as Assistant Professor in 2023. He has two years of teaching experience in Computer Science and applications at The Cochin College, Kochi and STAS Edappally. He did his Bachelor's Degree in Electronics from STAS Edappally (MG University) in 2016, Masters of Computer Applications from STAS Edappally in 2019. His areas of interest include Computer Security, Applied Cryptography, Big Data Analytics, Ethical Hacking, Internet of Things (IoT) and Machine Learning. He is an enthusiastic and dedicated educator who wants all children to be successful learners.

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