Predicting Student’s Campus Placement Probability using Binary Logistic Regression

D. Satish Kumar, P. Bindu, Zailan Bin Siri, D.S. Rao, S. Anusha

Abstract— Understudies trying to precise instructions for the most part chose instructive establishment with a notable popularity inside the primary settings. Many of those establishments several instances reputation controlled through bundles of compensation presented with the aid of the complainant for his understudies. In this putting it's far appropriate to explore and distinguish variables which could have an effect on the composition of the reason replacement special education. The threat within the State of Andhra Pradesh which has a excessive grouping established order of a unique training became appointed as research region. A careful survey of writing ends in a diagnosed proof of six determinants of speculative state of affairs inside the alternative special motive training. A arbitrary eg MBA alternative function information 250 is assembled from various organizations and located parallel relapse version became suited for the six signs for assessing information possibilities for placing alternative purpose. Assessed Results show that the possibility of putting in a simple exam is inspired by using 4 signs: CGPA, Specializes in PG, UG and Specialization in Gender.

Key words
Campus Placements Technical Education Odds Ratio Binary Logistic Regression Goodness of Fit Confusion Matrix

I. INTRODUCTION

Organizations nowadays are relying a ton on grounds enrollment to top off the outlet. Whilst the groups get the terrific potential from severa faculties, understudies moreover get an opportunity to start their career with probable the first-class corporations inside the organisation global. Every college have to have a situation mobile to allow the understudies to relaxed the best feature wherein they could sharpen their aptitudes and get ready for a remarkable future in advance. Understudies seeking out confirmation in a respectable college have to look for information approximately its state of affairs file to have the option to comprehend their odds of finding up a exceptional process when they whole their route. Grounds positions are beneficial for the understudies in a couple of way. The understudies get furnished to the expert administrative center at the right time and figure out the manner to set themselves up for the competition. Campus position of an understudy is based upon numerous additives: each scholastic and non scholarly. The prevailing paper tries to apprehend a element of these additives.

II. PROBLEM STATEMENT

Grounds arrangement probabilities are significant standards even as selecting an instructive foundation with the aid of the understudy. Numerous variables add to the grounds positions for a pupil:each scholastic and non instructional. Of these, scholarly accomplishments, each gift and past, softskills, space information, territory of specialization, monetary traits are considered right here. The present exam endeavors to fabricate an order model that can foresee the hazard that an understudy who participates in an control application with precise highlights can be set or now not. The version depends on twofold calculated relapse it's a generally utilized order calculation in this sort of troubles.

III. OBJECTIVES OF THE STUDY

☐ To have a have a look at the concept of grounds situations this is precious for the two students and group.
☐ To build a version that can be carried out to foresee the chance that a haphazardly picked understudy could be positioned or now not.
☐ To identification the factors which can be impacting the state of affairs odds of a scholar. In specialised preparation.

IV. LITERATURE REVIEW

The paper by manner of G.Vadivu, okay.Sornalakshmi applied Machine gaining knowledge of Algorithms for pupil Employability Prediction using R. On this paper, the machine inclining calculations ok-Nearest neighbor techniques KNN and Naive Bayes are applied to foresee the employability flair dependent on their regular execution. Calculations like KNN and Naive Bayes are beneficial to set up the gadgets int

Revised Manuscript Received on November 19, 2019
D. Satish Kumar, Department of Mathematics, KoneruLakshmaiah Education Foundation, Vaddeswaram- 522502, India
P. Bindu, Zailan Bin Siri, Institute of Mathematical Sciences, Faculty of Science, University of Malaya, 50603 Kuala Lumpur, MALAYSIA
D.S. Rao, Business School, KoneruLakshmaiah Education Foundation, Vaddeswaram- 522502, India
S. Anusha, Department of Mathematics, KoneruLakshmaiah Education Foundation, Vaddeswaram- 522502, India
Placement for IT sector via using using ANN. On this studies, the one-of-a-kind employability aptitudes that may almost in reality impact execution of building understudies in grounds function had been recognized. An synthetic Neural community (ANN) version become produced for searching ahead to chance of arrangement depending on employability skills.Tripti Mishra, Dharminde, Sangeeta Gupta made an research on pupil's employability forecast version through information mining. The understudies' employability is a awesome fear for the companies supplying superior schooling and a technique for early forecast of employability of the understudies is continuously appealing to take opportune movement.Hitarthi Bhatt, Shraddha Mehta, Lynette R. D'mello made a research on Use of ID3 decision Tree set of rules for Placement Prediction. The focal thing of this paper is to apprehend whether or now not the understudy gets function or no longer. Rama Krishna, Bode Prasad, Satyanarayana Murthy made an exam on Placement Prediction evaluation in college the usage of progressed decision Tree based algorithm.Ajay Kumar buddy, Saurabhpal made an studies on classification version of Prediction for Placement of college students. This research introduces a proposed model dependent on order manner to address find a sophisticated assessment method for foreseeing the placement for college kids.SudheepElayidom,Sumam Mary Idikkula,Joseph Alexander made a examination on A Generalized information digging Framework for Placement hazard Prediction troubles. Statistics Mining is this kind of promising innovation whose rate becomes clear whilst it has a bent to be implemented to a area where a everyday guy is profited

V. HYPOTHESIS COMPONENTS

In view of the writing evaluation the
H1: Gender influences understudy affiliation.
H2: PG specialization influences understudy's association.
H3: PG cgpa is decidedly impacting the understudy's possibility of association.
H4: UG specialization influences understudy's association.
H5: UG cgpa is decidedly impacting the understudy's probability of association.
H6: Softskills competency has fine impact on understudy's association.

VI. RESEARCH METHODOLOGY

An arbitrary instance 250 MBA understudies affiliation facts from 5 using foundations have been received. A six indicator paired strategic relapse version changed into suited to the records. The needy variable is paired with results: set or not-set. The indicators consideratedare :CGPA in UG and PG, Specialization in UG and PG, tender ability score and Gender. Wellknown descriptive checks were implemented to approve the fitted version. The open supply programming bundle deal R modified into utilized to interrupt down the statistics.

1. Binary Logistic Regression Model Estimation

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Placement Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictors</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>(Intercept)</td>
<td>0.00</td>
</tr>
<tr>
<td>gender</td>
<td>4.80</td>
</tr>
<tr>
<td>Pgpgm 2</td>
<td>1.23</td>
</tr>
<tr>
<td>Pgpgm 3</td>
<td>1.20</td>
</tr>
<tr>
<td>Pgpgm 4</td>
<td>1.98</td>
</tr>
<tr>
<td>Pgpgm 5</td>
<td>4.60</td>
</tr>
<tr>
<td>Upgpgm 2</td>
<td>1.81</td>
</tr>
<tr>
<td>Upgpgm 3</td>
<td>3.40</td>
</tr>
<tr>
<td>Upgpgm 4</td>
<td>2.34</td>
</tr>
<tr>
<td>Upgpgm 5</td>
<td>2.06</td>
</tr>
<tr>
<td>d MBA CGPA</td>
<td>2.83</td>
</tr>
<tr>
<td>d UG CGPA</td>
<td>0.71</td>
</tr>
<tr>
<td>d soft skills</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Cox & Snell's R² / Nagelkerke's R² 0.195 / 0.23

2. Model Diagnostics:

We have to carry out diagnostic tests before the binary logistic regression model can be validated
Null deviance: 214.74  on 247 degrees of freedom
Residual deviance: 149.62  on 229 degrees of freedom
AIC: 207.62

Hosmer-Lemeshow Goodness-of-Fit Test
Summary: model seems to fit well.
Cox & Snell's R²  0.195
Nagelkerke's R²  0.262

6.1 Confusion matrix:

<table>
<thead>
<tr>
<th></th>
<th>Predicted: 0</th>
<th>Predicted: 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual: 0</td>
<td>97</td>
<td>45</td>
</tr>
<tr>
<td>Actual: 1</td>
<td>24</td>
<td>81</td>
</tr>
</tbody>
</table>

True Positive + True Negatives
True Positive + True Negatives + False Positives + False Negatives

True positive=97
True negative=81
False negative=45
False positive=24
Model accuracy = 178/247
=72.06

The Hosmer-Lemeshow Goodness-of-Fit Test right that the model fit to the records. From Confusion Matrix is a model exactness of seventy two% which is a degree of precision that is very sensible. Cox and Snell R2/Nagelkerke is R2provides pseudo R2 measures for the model. ROC bend is established as follows.
VII. DATA ANALYSIS AND INTERPRETATION

Facet results of the strategic version of the six signs used to test the examination speculation in terms of the connection between the possibility that a replacement is inserted and alternative Gender, specialization PG, PG CGPA, specialization UG, UG CGPA, mild potential capabilities that appear within the desk. According with the results established in table 1 we're able to make a stop that accompany it.

1. Feasible replacement sets creature changed into truly recognized by manner of its PG CGPA (2.80 3 (p = zero.001)), Gender, PG and UG specialization.
2. The higher the PG CGPA is much more likely that an opportunity is being set.
3. Three. Given the identical CGPA in PG, student are guys will definitely regulate the evaluation with the female alternative.
4. Four. Given the synthetic equal CGPA on this vicinity with advertising and marketing and Finance will definitely positioned.
5. Five. Given this CGPA comparable substitute of B.Com basis of their UG sure to be laid.
6. 6. Based on the ROC research we are able to nation that the version with the six signs and symptoms taken into consideration to have a 60% accuracy in looking ahead to whether a replacement might be blanketted or not.

VIII CONCLUSIONS

The present paper attempted to build a binary classification model using logistic regression for predicting the likelihood that a management graduate be campus placed given that he acquires some competencies apart from his initial attributes. Results of the study indicates that gender difference, CGPA, and area of specialization can account for 60% of the variance in the placement probability of the sampled respondents. Sample size is an important constraint in this study for claiming external validity of the results.

REFERENCE

2. Manoj okay Shukla, Pranay Rambade, Jay Torasakar, Rakesh Prabhu, and Deepali Maste students study Placement Prediction version using logistic regression, the diary worldwide research and generation (IJERT), Vol.05, issue., 1, pp.1-4,2017
3. Vijay N. Kalbande, Dr. C.C. Handa, increase models for predicting manner assemble understudies inside the position of the motives for that phase, international journal of superior studies in Engineering, technology and technology (IJAREST), ISSN (O): 2393-9877, ISSN (P): 2394-2444, extent 2, problem 6, June-2015.
4. Tripti Mishra, Dharminde, Sangeeta Gupta, scholar take a look at a forecast models artwork through a mine of information, international journal of implemented Engineering studies ISSN 0973-4562 quantity 11, number four (2016) pp 2275-2282.
7. Ajay Kumar buddy, Saurabh pal, class of training Placement Prediction model college students.IJ. Present day and computer science, 2013, eleven, forty nine-56 posted on line November 2013 in MECS, DOI: 10.5815 / ijmecs.2013.11.07