

Identifying Patterns and Trends in Campus Placement Data using Machine Learning

1 INTRODUCTION :

1.1 OVERVIEW :

Campus recruitment is a strategy for sourcing, engaging and hiring young talent for internship and entry-level positions. College recruiting is typically a tactic for medium- to large-sized companies with high-volume recruiting needs, but can range from small efforts (like working with university career centers to source potential candidates) to large-scale operations (like visiting a wide array of colleges and attending recruiting events throughout the spring and fall semester). Campus recruitment often involves working with university career services centers and attending career fairs to meet in-person with college students and recent graduates. Our solution revolves around the placement season of a Business School in India. Where it has various factors on candidates getting hired such as work experience, exam percentage etc., Finally it contains the status of recruitment and remuneration details.


1.2 Purpose :

Campus placement or campus recruiting is a program conducted within universities or other educational institutions to provide jobs to students nearing completion of their studies. In this type of program, the educational institutions partner with corporations who wish to recruit from the student population. Campus hiring is an important part of the recruitment strategy of an organization. It enables organizations to connect, assess, select, and engage fresh graduates. While traditionally organizations use to visit multiple campuses, technology has enabled end-to-end campus hiring drives to go digital.

2 Problem Definition & Design Thinking

2.1 Empathy Map :

Template



Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

[Share template feedback](#)

Build empathy

The information you add here should be representative of the observations and research you've done about your users.

Says

What have we heard them say?
What can we imagine them saying?

How much salary?

Available jobs

Working Area

Thinks

What are their wants, needs, hopes, and dreams? What other thoughts might influence their behavior?

Need Motivation to Depressed Time

Want Good Level Salary

Need Incentive

Owns CEO Of The Company

Does

What behavior have we observed?
What can we imagine them doing?

Honest Man in Work

Positive Attitude

Hard Worker

Feels


What are their fears, frustrations, and anxieties? What other feelings might influence their behavior?

Family Problems

Interview Pressure


Bad Communication Skills

IDENTIFYING PATTERNS AND TRENDS IN CAMPUS PLACEMENT DATA USING MACHINE LEARNING



Need some inspiration?
See a finished version of this template to kickstart your work.

[Open example](#)



2.2 Ideation & Brainstorming Map

1

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

🕒 5 minutes

PROBLEM
1. How can I improve my campus placement?

PROBLEM
2. What are the steps of campus placement?

PROBLEM
3. What are the main skills of campus placement?

PROBLEM
4. What are the principles in campus placement?

PROBLEM
5. What are the affecting factors for campus placement?

2

Brainstorm

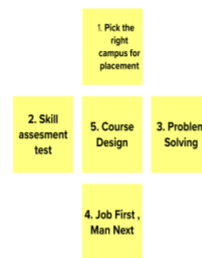
Write down any ideas that come to mind that address your problem statement.

🕒 10 minutes

TIP

You can select a sticky note and hit the pencil (switch to sketch) icon to start drawing!

KISHORE L



DHILIPKUMAR K



VELMURUGAN P



KISHORE S



GOKULKANNAN





Collect your ideas in one place

Jot down different ideas your team is interested in trying out. These could be different solutions, or different approaches to the same solution. As a team, go through the ideas in the Idea bank one by one and place them on the grid. Take the time to discuss each idea and come to a consensus on where it should go.

Idea bank

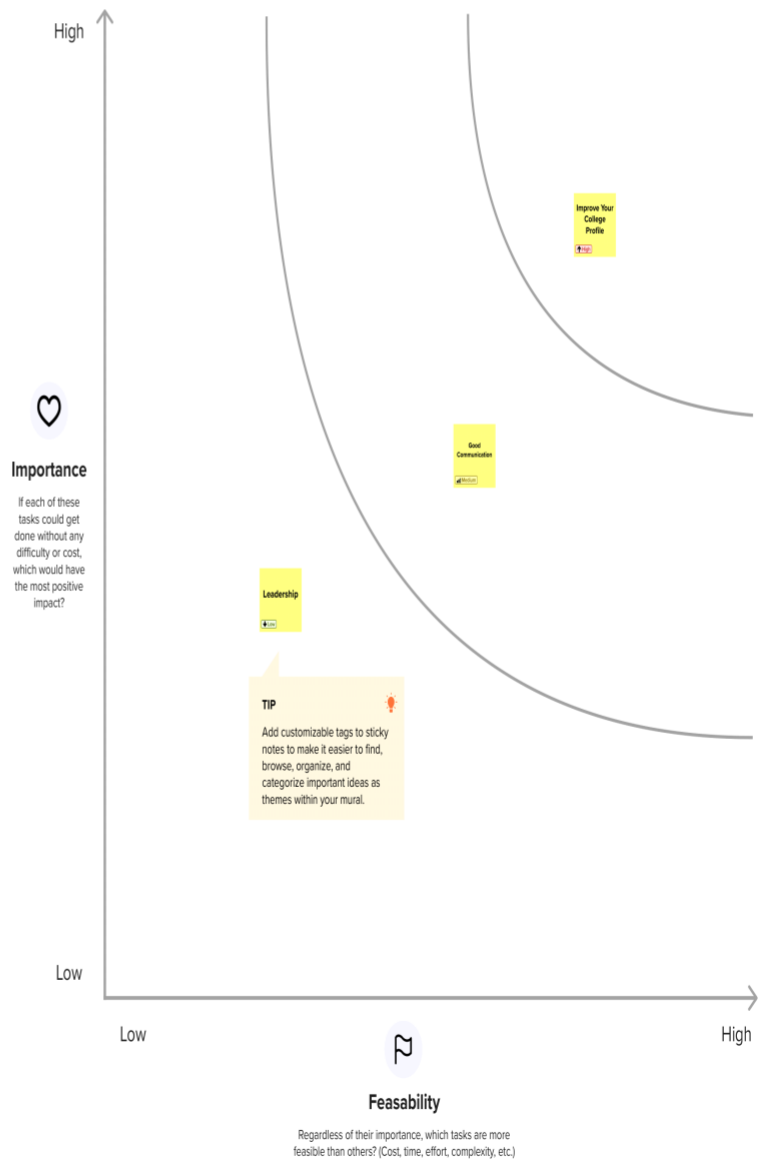
Problem Solving

Good Communication

Co-Operation

Improve Your College Profile

Leadership



3 RESULT :



FILL THE DETAILS

22
0
2
1
8
1
Submit

PLACEMENT PREDICTION

The Prediction is : 1

0 represents Not Placed

1 represents Placed

4 ADVANTAGES & DISADVANTAGES

4.1 Advantages :

Campus recruitment activity offers several advantages to both the companies as well as the job applicants. Following are some of the main advantages of campus recruitment listed below -

The companies will be benefited from getting wide choice of candidates to select for different job posts. Companies can select the right and talented candidate from a vast pool of young applicants within a limited time. On the other hand, students have the advantage of getting a good job according to their qualification leave even before the completion of their academic course in college.

Campus recruitment helps in saving time and efforts of the companies. The entire campus recruitment process from a college is not a tedious toil. It prevents the occurrence of unusual expenditures related to recruitment process such as advertisement, initial screening, and final selection procedures etc. This in turn turns to be useful in reduced manpower effort and time as well.

An organization through effective campus recruitment finds an opportunity to establish a link with the next batch of students.

- Improved Retention Rates. ...
- Getting New Knowledge & Skills. ...
- Quick Learners & Multi-tasking candidates. ...
- Good relationship between Organization & Campus. ...
- High Volume of Talent Pool. ...
- Resumes are the only way to select a candidate. ...
- Limited Staff & Time.

4.2 Disadvantages :

There are disadvantages of off-campus placements like increased competition, limited chances of success, tedious process and grilling during the interview. Both, off-campus placements and on-campus placements have their pros and cons but ultimately lead to the same goal.

Candidates need to work hard to crack campus placement interviews and as freshers, they require a lot of training for work.

Companies incur different expenses related to travel, boarding, training etc while conducting campus selection process. The experienced and skilled candidates having practical job exposures cannot be recruited through campus placements. Fresh candidates selected through campus placements require adequate training for work. This is an additional expense for the company. Also, students can't work with their dream company and will have to remain satisfied with the company that recruits them during campus selection.

- Limited Staff. Most of the Campus Recruitment drives have a fixed pattern. ...
- Lack of proper branding. ...
- High Candidates numbers. ...
- Negative Candidate experience. ...
- Importance of a Resume.

5 APPLICATIONS

- **COLLEGES**
- **UNIVERSITIES**

6 CONCLUSION

At the completion of placement, students and supervisors should complete the end of placement evaluation form. It is the student's responsibility to arrange for a time for feedback no later than the last day of placement. Students or supervisors may contact the Placement Coordinator or Course Convenor and request the attendance of one of the University staff at the meeting. This evaluation form should be forwarded to the Placement Coordinator, with the supervisor and the student also keeping copies.

7 FUTURE SCOPE

According to a research, almost 70% of companies are looking to employ new college graduates every year. However, only those that adjust their campus strategies and use time-saving technologies will be successful.

The days of standing in queues and waiting to deliver interviews are long gone. Graduates these days don't look up billboards or wait for weeks for a phone call or a letter in the mail.

This generation is just out of college and is already changing the way companies hire and recruit. More and more companies are looking to meet them mid-way and are transforming the recruitment and selection process that has existed for years. The latest generation of graduates know what they want and devise means to work out the best work-life balance.

8 APPENDIX

```
import numpy as np
import pandas as pd
import os
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn import svm
from sklearn.metrics import accuracy_score
from sklearn.neighbors import KNeighborsClassifier
from sklearn import metrics
from sklearn.model_selection import cross_val_score
from sklearn import preprocessing
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
import joblib
from sklearn.metrics import accuracy_score
df=pd.read_csv("/content/college Place.csv")
df.head()
df.info()
df.isnull().sum()
def transformationplot(feature):
    plt.figure(figsize=(12,5))
    plt.subplot(1,2,1)
    sns.distplot(feature)
```

```
transformationplot(np.log(df['Age']))

df=df.replace(['Male'],[0])

df=df.replace(['Female'],[1])

df=df.replace(['Computer Science','Information Technology','Electronics and
Communication','Mechanical','Electrical','Civil'],[0,1,2,3,4,5])

df=df.drop(['Hostel'],axis=1)

plt.figure(figsize=(12,5))

plt.subplot(121)

sns.distplot(df['CGPA'],color='r')

plt.figure(figsize=(12,5))

plt.subplot(121)

sns.distplot(df['PlacedOrNot'],color='r')

#plotting the count plot

plt.figure (figsize=(18,4))

plt.subplot(1,4,1)

sns.countplot(data['Gender'])

plt.subplot(1,4,2)

sns.countplot(data['Education'])

plt.show()

plt.figure (figsize=(20,5))

plt.subplot(131)

sns.countplot(df["PlacedOrNot"],hue=df['CGPA'])

sns.swarmplot(df['PlacedOrNot'],df['CGPA'],hue=df['Stream'])

sc=StandardScaler()
```

```

x_bal=sc.fit_transform(x_bal)
x_bal=pd.DataFrame(x_bal,columns=names)
X=standardized_data
Y=df['PlacedOrNot']
X_train,X_test,Y_train,Y_test=train_test_split(X,Y,test_size=0.2,stratify=Y,random_state=2)
classifier=svm.SVC(kernel='linear')
classifier.fit(X_train,Y_train)
SVC(kernel='linear')
X_train_prediction=classifier.predict(X_train)
training_data_accuracy=accuracy_score(X_train_prediction,Y_train)
print('accuracy score of the training data :', training_data_accuracy)

```

```

best_k={"Regular":0}
best_score={"Regular":0}
for k in range(3,50,2):
    knn_temp=KNeighboursClassifier (n_neighbours=k)
    knn_temp.fit(X_train,Y_train)
    knn_temp_pred=knn_temp.predict(X_test)
    score=metrics.accuracy_score[" Regular"] and score<100:
    best_score["Regular "]=score
    best_k["Regular "]=k
print ("--results--/nK:{}\nScore:{}". format (best_k,best_score))
knn=KNeighboursClassifier (n_neighbiurs=best_k["Regular"])
knn.fit(X_train,Y_train)

```

```

knn_pred=knn.predict(X_test)
tested=accuracy_score(knn_pred,Y_test)

import tensorflow as tf
from tensorflow import keras
from keras.models import Sequential
from tensorflow.keras import layers

[] classifier= Sequential ()
classifier.add(keras.layers.Dense(6, activation='relu',input_dim=6))
classifier.add(keras.layers.Dropout(0.50))
classifier.add(keras.layers.Dense (6, activation='relu'))
classifier.add(keras.layers.Dropout(0.50))
classifier.add(keras.layers.Dense(1, activation='sigmoid'))
loss_1=tf.keras.losses.BinaryCrossentropy()
classifier.compile(optimizer='Adam',loss=loss_1,metrics=['accuracy'])
classifier.fit(X_train,Y_train,batch_size=20,epochs=100)

[] import pickle
pickle.dump(knn,open("placement.pk1",'wb'))
model=pickle.load(open("placement.pk1",'rb'))

```

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```
from flask import Flask,render_template, request
```

```
app=Flask(name)
```

```
import pickle
```

```
import joblib
```

```
model=pickle.load(open("placement 123.pkl","rb"))
```

```
ct=joblib.load('placement')
```

```
@app.route('/')
```

```
def hello():
```

```
    return render_template("index.html")
```

```
@app.route('/guest',methods=["POST"])
```

```
def guest():
```

```
    sen1=request.form["sen1"]
```

```
sen2=request.form["sen2"]
```

```
sen3=request.form["sen3"]
```

```
sen4=request.form["sen4"]
```

```
sen5=request.form["sen5"]
```

```
sen6=request.form["sen6"]
```

```
@app.route('/y_predict', methods=["POST"])
```

```
def y_predict():
```

```
    x_test=
```

```
    prediction=model.predict(x_trst)
```

```
prediction=prediction [0]
```

```
return render_template("secondpage.html",y=prediction)
```

```
app.run(debug=True)
```