

Intelligent Admissions: The Future of University Decision Making with Machine Learning

Introduction

Overview

University admission is the process by which students are selected to attend a college or university. The process typically involves several steps, including submitting an application, taking entrance exams, and participating in interviews or other evaluations.

Students are often worried about their chances of admission in University. the university admission process for students can be demanding, but by being well-informed, prepared, and organized, students can increase their chances of being admitted to the university of their choice.

The aim of this project is to help students in short listing universities with their profiles. Machine learning algorithms are then used to train a model on this data, which can be used to predict the chances of future applicants being admitted.

With this project, students can make more informed decisions about which universities to apply to, and universities can make more efficient use of their resources by focusing on the most promising applicants .The predicted output gives them a fair idea about their admission chances in a particular university. This analysis should also help students who are currently preparing or will be preparing to get a better idea.

Purpose

This project can help students to predict their chance of admission in universities .The project is employed with a well trained model which can predict accurate results. With proper user(student) input, the flask web app can predict the result with the trained model.

Problem Definition and Design Thinking

Empathy Map

Template



Empathy map

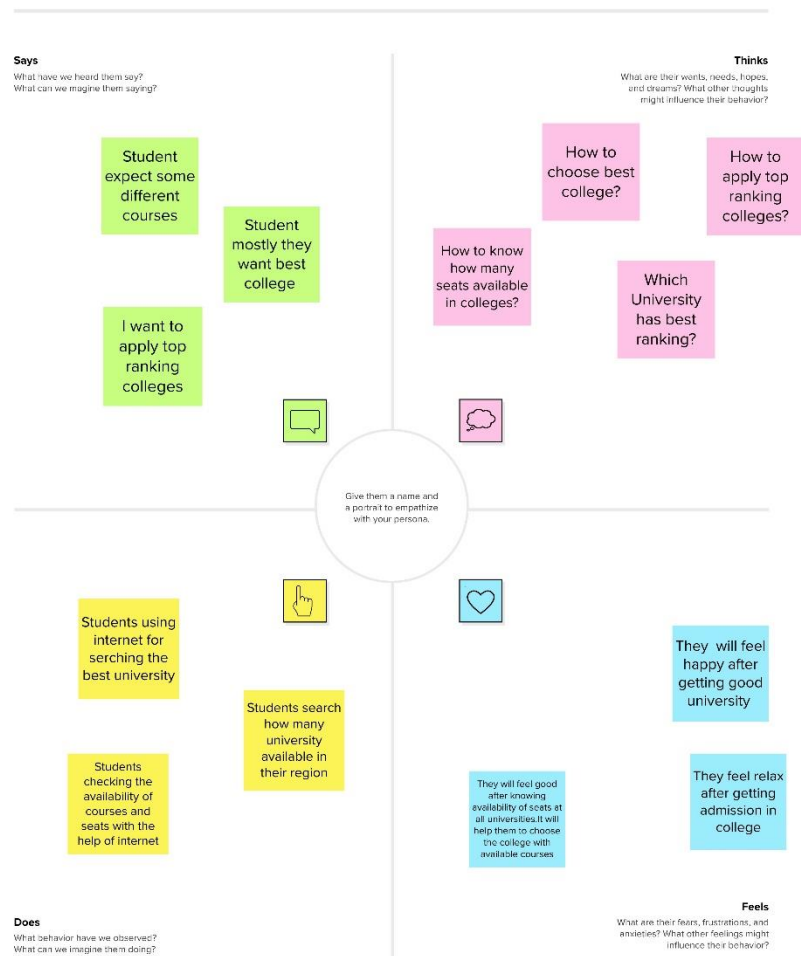
Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, need and pain points, to quickly understand your users' experience and mindset.

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Build empathy

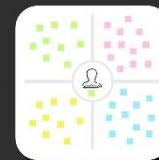
The information you add here should be representative of the observations and research you've done about your users.



Need some inspiration?


See a finished version of this template to inspire your work.

[Open example](#)






Brainstorm and Idea Prioritization

Template




Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.


 10 minutes to prepare
 1 hour to collaborate
 2-8 people recommended

[Share template feedback](#)



Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

 10 minutes

A

Team gathering

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B

Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.

C

Learn how to use the facilitation tools


Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#) →

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


How student can select local universities for their higher education?





Key rules of brainstorming


To run a smooth and productive session


 Stay in topic.

 Encourage wild ideas.

 Defer judgment.

 Listen to others.

 Go for volume.

 If possible, be visual.



Need some inspiration?

See a finished version of this template to kickstart your work.

[Open example](#) →

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!

Senthamizhan

Ranking options based upon requirements

Exploring specialised courses

Eliminating misfit or incompatible options

Ranking institution credibility

Priya

Helping them to realise their potential

providing a basic scale of profile potency

Inquiring about available facilities

course trends analysis

Gowsalya

Range of Courses

Noting the advantages based upon criteria

considering Travel distance

Filtering based on prediction

Vertrithamizhan

Cost Estimation

Matching grade requirements

Noting Placement History

Establishing optimal selection criteria



3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

🕒 20 minutes

Ranking
options
based on
requirements

Cost
Estimation

Helping
them to
realise their
potential

TIP
Add customizable tags to sticky
notes to make it easier to find,
browse, organize, and
categorize important ideas as
themes within your mural.

Eliminating
misfit or
incompatible
options

Inquiring
about
available
facilities

Noting the
advantages
based upon
criteria

providing a
basic scale
of profile
potency

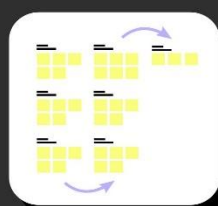
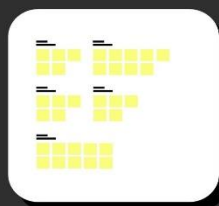
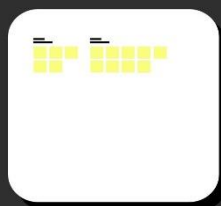
Exploring
specialised
courses

Placement
History

Matching
grade
requirements

considering
Travel
distance

Range of
Courses

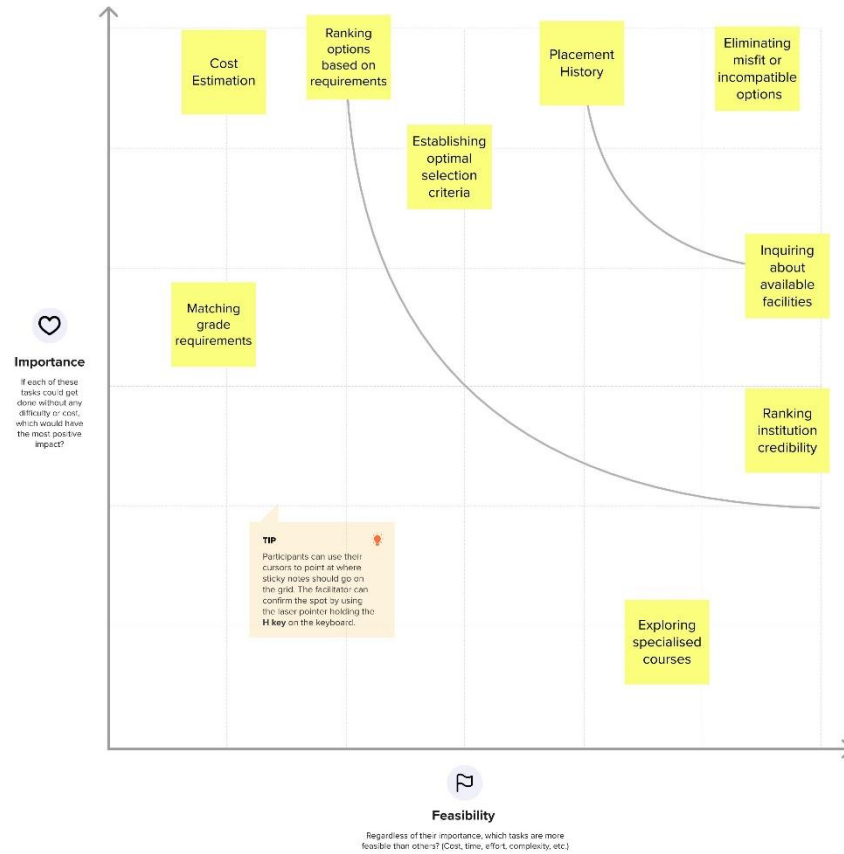


4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes



→

After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

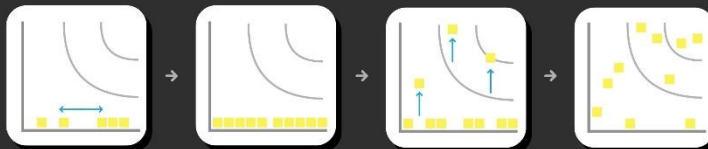
Quick add-ons

- A Share the mural**
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.
- B Export the mural**
Export a copy of the mural as a PNG or PDF to attach to emails, include in slides, or save in your drive.

Keep moving forward

- Strategy blueprint**
Define the components of a new idea or strategy.
[Open the template →](#)
- Customer experience journey map**
Understand customer needs, motivations, and obstacles for an experience.
[Open the template →](#)
- Strengths, weaknesses, opportunities & threats**
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.
[Open the template →](#)

[Share template feedback](#)



Result

Homepage

UNIVERSITY ADMISSION PREDICTION SYSTEM

Enter your details and get probability of your admission

Enter GRE Score

Enter TOEFL Score

Select University no ☒ 1
☐ 2
☐ 3
☐ 4
☐ 5

Enter SOP

Enter LOR

Enter CGPA

Research ☒ Research
☐ NO Research

Prediction

chance.html

File | C:/Users/BALA/Music/Flask%20App/templates/chance.html

Prediction Chance of Admission

A Machine Learning Web App using Flask.

Prediction: You have a chance of getting admission

"Chance of Admit" depends on CGPA,GRE,,TOEFEL .The columns SOP,LOR and Researchhave less impact on university admission.

GRE score TOEFL score and CGPA all are linearly related to each other.

Students in research score high in TOEFL and GRE compared to non research candidates.

Advantages and Disadvantages

Advantages

The project takes into account of all the necessary variables that determine the admission of students in universities.

The variables are absolutely bare minimal and is strictly required to perform accurate predictions.

It helps students to get a preliminary prediction of how their profile/score may perform on the university prediction process.

It enables students to get their overall image on university short listings...

Disadvantages

This project only takes into account of minimal variables and special edge cases are not considered.

It omits certain special cases which the students and universities may have come across.

The dataset used is merely adequate not dense enough to train high or world class models that is capable of predicting complex inputs while producing accurate results.

Currently, this project makes use of web technologies such as jupyter notebook

Due to poor hardware at our end we have used the web technologies, to deploy the code in other environments and produce a valid webapp, the code must be modified to be run locally on the development server.

Applications

This project unfortunately can only be applied to Education Fields especially, Universities.

And it is only useful for students to assess their profile performance.

The project may be further modified to fit other educational fields such as schools and other educational bodies, that assess student's past performance to allow them in their institutions.

Conclusion

This project is very useful for students to assess their overall profile performance that is necessary to get a overall preliminary of their profile before applying applications to various universities.

It helps them to filter out universities that fit their profile and apply to selected universities that has high rate of being accepted.

Future Scope

This project will help the students for selecting the university through website and checking the availability of the seats for courses available in the particular universities.

The prediction will be a important asset for the future world.

The machine learning will be a great predicting option for almost all sectors available in this world and future world too.

Appendix

Flask App

```
import numpy as numpy
from flask import Flask, request, jsonify, render_template
import pickle
app = Flask(__name__)
#Import necessary libraries
from tensorflow.keras.models import load_model

#model = pickle.load(open('university.pkl', 'rb'))
#load model trained model
# Load your trained model
model = load_model('model.h5')

@app.route('/')
def home():
    return render_template('Demo2222.html')

@app.route('/y_predict', methods=['POST'])
def y_predict():
    """
    For rendering results on HTML GUI
    """
    #min max scaling
    min1=[290., 92.0, 1.0, 1.0, 1.0, 6.8, 0.0]
    max1=[340.0, 120.0, 5.0, 5.0, 5.0, 9.92, 1.0]
    k= [float(x) for x in request.form.values()]
    p = []
    for i in range(7):
        l=(k[i]-min1[i])/(max1[i]-min1[i])
        p.append(l)
    prediction = model.predict([p])
    print(prediction)
    output=prediction[0]
    if(output==False):
        return render_template('noChance.html', prediction_text='You Dont
have a chance of getting admission')
```

```
        else:
            return render_template('chance.html', prediction_text='You have a
chance of getting admission')
if __name__=="__main__":
    app.run(debug=False)
```

Home Page(HTML)

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

```
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
    <title>Untitled Page</title>
    <style> body {
        background-image: url(https://iili.io/HvVtXBj.jpg);

        background-repeat: no-repeat;
        background-color: #f2d299;
        background-position: center;
        background-attachment: fixed;
        background-size: 1370px;

    }

</style>
<style type="text/css">
    .style1
    {
        width: 100%;
    }
    #btnpredict
    {
        height: 35px;
        width: 89px;
    }
    .style2
    {
```

```
        width: 136px;
    }
    .style3
    {
        width: 136px;
        height: 32px;
    }
    .style4
    {
        height: 32px;
    }
    .style5
    {
        width: 136px;
        height: 67px;
    }
    .style6
    {
        height: 67px;
    }
    .style7
    {
        width: 136px;
        height: 25px;
    }
    .style8
    {
        height: 25px;
    }
</style>
```

```
<script language="javascript" type="text/javascript">
// <![CDATA[
```

```
function btnpredict_onclick() {

}
```

```
function Radio7_onclick() {  
  
}
```

```
function Radio1_onclick() {  
  
}
```

```
// ]]>
```

```
</script>
```

```
</head>
```

```
<body>
```

```
<form>
```

```
    <table class="style1">
```

```
        <tr>
```

```
            <td><h1><p><font color="darkviolet">
```

```
                UNIVERSITY
```

```
                ADMISSION
```

```
                PREDICTION
```

```
SYSTEM</font></p></td></h1>
```

```
        </tr>
```

```
        <tr>
```

```
            <td>
```

```
                <h2><b>Enter your details and get probablitiy of your  
admission</b></h2></td>
```

```
            </tr>
```

```
    </table>
```

```
    <form id="form1" runat="server">
```

```
        <table class="style1">
```

```
            <tr>
```

```
                <td class="style2">
```

```
                    Enter GRE Score</td>
```

```
                <td>
```

```
                    <input name="text"="">
```

```
                </td>
```

```
            </tr>
```

```
            <tr>
```

```
                <td class="style2">
```

```
                    Enter TOEFL Score</td>
```

```
                <td>
```

```
                    <input name="text"="">
```



```

        </td>
    </tr>
    <tr>
        <td class="style7">
            Select University no</td>
        <td class="style8">
            <input      id="Radio1"      type="radio"      onclick="return
Radio1_onclick()"
            name="Select University no1" value="rd1" />1</td>
    </tr>
    <tr>
        <td class="style5">
            </td>
        <td class="style6">
            <input id="Radio2" name="Select University no1" type="radio"
value="rd2" />2<br />
            <input      id="Radio3"      type="radio"      onclick="return
Radio7_onclick()"
            name="Select University no1" value="rd3" />3<br />
            <input id="Radio4" name="Select University no1" type="radio"
value="rd4" />4<br />
            <input id="Radio5" name="Select University no1" type="radio"
value="rd5" />5</td>
    </tr>
    <tr>
        <td class="style3">
            Enter SOP</td>
        <td class="style4">
            <input name="text"="">
        </td>
    </tr>
    <tr>
        <td class="style2">
            Enter LOR</td>
        <td>
            <input name="text"="">
        </td>
    </tr>
    <tr>

```

```

        <td class="style2">
            Enter CGPA</td>
        <td>
            <input name="text"="">
        </td>
    </tr>
    <tr>
        <td class="style2">
            Research</td>
        <td>
            <input id="Radioresearch" name="Enter CGPA" type="radio"
value="rdresearch" />Research</td>
        </tr>
        <tr>
            <td class="style2">
                &nbsp;</td>
            <td>
                <input id="Radionoresearch" name="Enter CGPA" type="radio"
value="rdnoresearch" />NO
                Research</td>
            </tr>
            <tr>
                <td class="style2">
                    &nbsp;</td>
                <td>
                    &nbsp;</td>
            </tr>
        </table>
        <p>
            <p>

            <a href="chance.html"><button type="button"
class="myButton">Predict</button></a>
            <p>
                &nbsp;</p>
        </form>
    </body>
</html>

```

Predict Page(HTML)

Chance Page

```
<!DOCTYPE html>

<html>

<head>

    <meta charset="utf-8">

    <meta    name="viewport"    content="width=device-width,    initial-
scale=1">

    <title></title>

</head>

<body>

    <h1><p>Prediction Chance of Admission</p></h1>

    <p>A Machine Learning Web App using Flask.</p>

    Prdiction:<u><b>You have a chance of getting admission</b></u>

</body>

</html>
```

No Chance Page

```
<!DOCTYPE html>

<html>

<head>

    <meta charset="utf-8">

    <meta    name="viewport"    content="width=device-width,    initial-
scale=1">
```

<title></title>

</head>

<body>

<h1><p>Prediction Chance of Admission</p></h1>

<p>A Machine Learning Web App using Flask.</p>

Prdiction:<u>You Dont have a chance of getting admission</u>

</body>

</html>