## FIFA World Cup 2018 Best XI: Analyzing Fifa Dataset Using Python

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Once in every 4 years, the world celebrates a festival called "*Fifa World Cup*" and with that, everything seems to change. Priorities switch to football, and predictions switch to the teams and players that would perform in the tournament. Through the medium of this blog, I am going to predict the "*World's Best Playing XI*" in 2018 and I would be using Python for the analytical implementation.

## Analyze the Fifa Dataset to predict the World's Best Playing XI in 2018!!

In my quest to carry out the above mentioned task, I stumbled upon an interesting dataset on Kaggle. I am going to stick with it and use it to predict the strongest 11 players taking part in this world cup 2018. Based on player availability, the best possible lineup is a 4-3-3. Using this dataset, I would be giving you a step by step approach to analyze various characteristics that would help us infer the best players for the World Cup 2018.

So, let's get started :-)



Let's start by **importing** the dataset and the required libraries in Python.

```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
import numpy as np
matplotlib inline
df = pd.read_csv("FullData.csv")
df.head(7)
```



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|                     | Name                  | Nationality | National_Position | National_Kit | Club              | Club_Position | Club_Kit | Club_Joining | Contract_Expiry | Rating |  | Long_Shots | Curve |
|---------------------|-----------------------|-------------|-------------------|--------------|-------------------|---------------|----------|--------------|-----------------|--------|--|------------|-------|
| 0                   | Cristiano<br>Ronaldo  | Portugal    | LS                | 7.0          | Real<br>Madrid    | LW            | 7.0      | 07/01/2009   | 2021.0          | 94     |  | 90         | 81    |
| 1                   | Lionel Messi          | Argentina   | RW                | 10.0         | FC<br>Barcelona   | RW            | 10.0     | 07/01/2004   | 2018.0          | 93     |  | 88         | 89    |
| 2                   | Neymar                | Brazil      | LW                | 10.0         | FC<br>Barcelona   | LW            | 11.0     | 07/01/2013   | 2021.0          | 92     |  | 77         | 79    |
| 3                   | Luis Suárez           | Uruguay     | LS                | 9.0          | FC<br>Barcelona   | ST            | 9.0      | 07/11/2014   | 2021.0          | 92     |  | 86         | 86    |
| 4                   | Manuel<br>Neuer       | Germany     | GK                | 1.0          | FC Bayern         | GK            | 1.0      | 07/01/2011   | 2021.0          | 92     |  | 16         | 14    |
| 5                   | De Gea                | Spain       | GK                | 1.0          | Manchester<br>Utd | GK            | 1.0      | 07/01/2011   | 2019.0          | 90     |  | 12         | 21    |
| 6                   | Robert<br>Lewandowski | Poland      | LS                | 9.0          | FC Bayern         | ST            | 9.0      | 07/01/2014   | 2021.0          | 90     |  | 82         | 77    |
| 7 rows × 53 columns |                       |             |                   |              |                   |               |          |              |                 |        |  |            |       |

It is evident from the above screenshot, there are 53 columns which include the following attributes:



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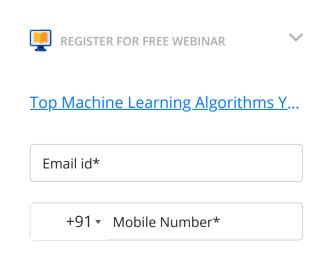
Name, Nationality, National\_Position, National\_Kit, Club, Club\_Position, Club\_Kit, Club\_Joining, Contract\_Expiry, Rating, Height, Weight, Preffered\_Foot, Birth\_Date, Age, Preffered\_Position, Work\_Rate, Weak\_foot, Skill\_Moves, Ball\_Control, Dribbling, Marking, Sliding\_Tackle, Standing\_Tackle, Aggression, Reactions, Attacking\_Position, Interceptions, Vision, Composure, Crossing, Short\_Pass, Long\_Pass, Acceleration, Speed, Stamina, Strength, Balance, Agility, Jumping, Heading, Shot\_Power, Finishing, Long\_Shots, Curve, Freekick\_Accuracy, Penalties, Volleys, GK\_Positioning, GK\_Diving, GK\_Kicking, GK\_Handling and GK\_Reflexes.

Analyzing this huge dataset is a tedious task as it involves quite a few pre-processing steps. There might be a lot of redundant and unwanted columns, which can be removed. Therefore you can delete certain columns if needed, by writing the below code:

```
del df['National_Kit'] #deletes the column National_Kit
df.head()
```

Once you have simplified this data, you can then start with the analysis part. Let us begin with the simplest plot. This graph gives us the number of players representing a particular country. Now, these graphs are best used to gain statistical insights.

```
plt.figure(figsize=(15,32))
sns.countplot(y = df.Nationality,palette="Set2") #Plot all the nations on Y Axis
```

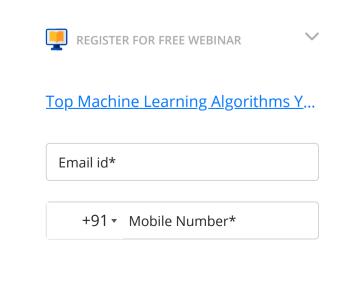


**Note:** The plot generated from the above code will display all the football playing nations, but for the sake of simplicity, I have just displayed the top 28 countries which would give me the desired results.

Using this graph, we conclude that most of the players are from *England, Argentina, Spain, France and Brazil*. In this case, the graph won't add a lot of value because we would be picking the best XI, and the results may vary.

Moving ahead with the analysis, you can try out different visualizations with the player's age, preferred\_position, rating, club etc. Let me show you one such visualization and then we'll switch to our analysis of the best playing XI for the world cup.

```
plt.figure(figsize=(15,6))
sns.countplot(x="Age",data=df)
```



It is evident from the above screenshot that the majority of players are between the age of 20 and 29, with the largest peak of **25 years**.

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Now is the time we try and find the answer to the question put forth in the problem statem *Playing XI?* 

Let us begin our analysis. Let us start by considering the following playing formation, 4-3-3 defenders, 3 best mid-fielders and 3 best attackers. Let us start our quest by finding a goalkee

## World's Best Playing XI: Finding The Best Goalkeeper

In order to get the best goalkeeper, I'll be analyzing the data for the below mentioned parameters:

- 1. **Shot Stopper**: A goalkeeper who is strong in stopping shots taken by opponents.
- 2. **Sweeper**: A goalkeeper who is strong in playing with his feet and making passes.

```
#weights
a = 0.5
b = 1
c= 2
d = 3

#GoalKeeping Characterstics
df['gk_Shot_Stopper'] = (b*df.Reactions + b*df.Composure + a*df.Speed + a*df.Strength + c*df.Jumping + b*df['gk_Sweeper'] = (b*df.Reactions + b*df.Composure + b*df.Speed + a*df.Short_Pass + a*df.Long_Pass + b*df.Speed + a*df.Short_Pass + a*df.Long_Pass + b*df.Speed + a*df.Short_Pass + a*df.Long_Pass + b*df.Speed + a*df.Speed + a*df.Short_Pass + a*df.Long_Pass + b*df.Speed + a*df.Speed + a*
```

Based on the above parameters, I'll be predicting my best goalkeeper as per the dataset. Let us now plot these parameters:

```
plt.figure(figsize=(15,6))

# Generate sequential data and plot

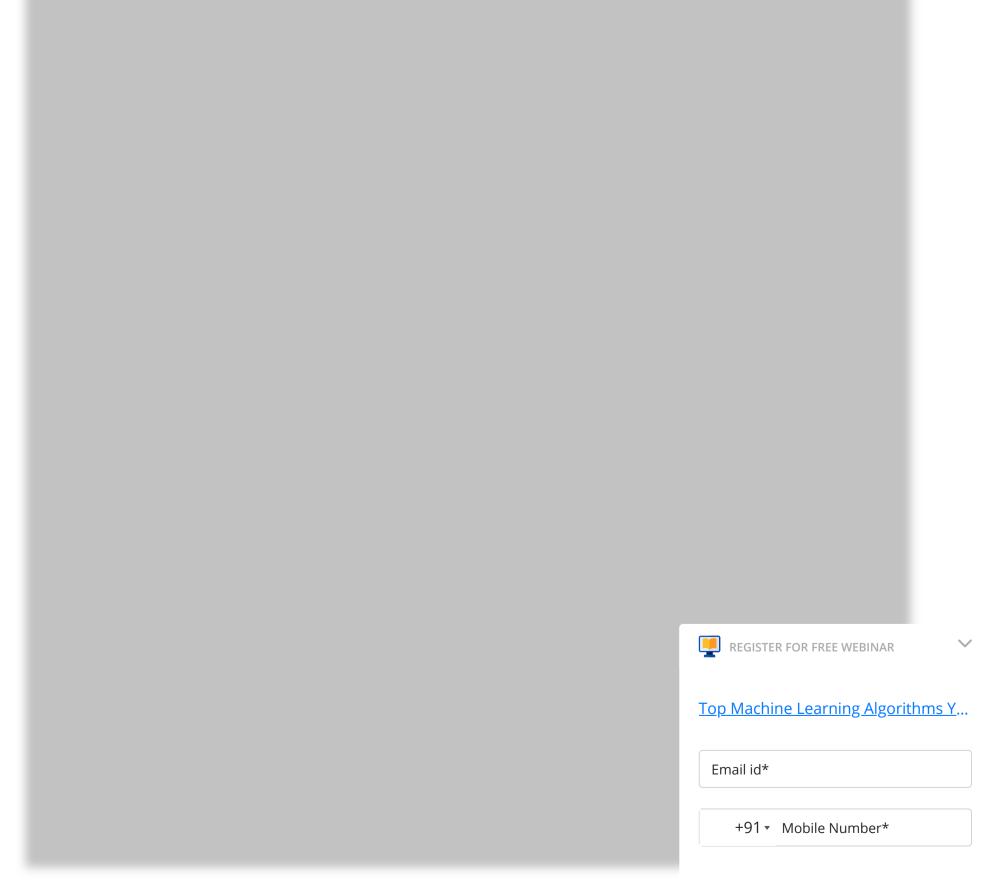
sd = df.sort_values('gk_Shot_Stopper', ascending=False)[:5]

x1 = np.array(list(sd['Name']))

y1 = np.array(list(sd['gk_Shot_Stopper']))

sns.barplot(x1, y1, palette= "colorblind")

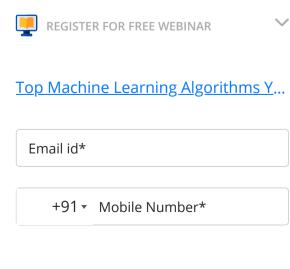
plt.ylabel("Shot Stopping Score")
```



Based on the shot-stopper characteristics, it can be inferred that *Manuel Neuer is the best*, the above list. Let us now plot the other parameter(Sweeper) as well.

```
plt.figure(figsize=(15,6))
sd = df.sort_values('gk_Sweeper', ascending=False)[:5]
x2 = np.array(list(sd['Name']))
y2 = np.array(list(sd['gk_Sweeper']))
sns.barplot(x2, y2, palette= "colorblind")
plt.ylabel("Sweeping Score")
```

Manuel Neuer tops the chart here as well. Based on the two parameters we used, we can conclude that *Manuel Neuer would be the best choice goalkeeper* for the World Cup 2018.



Next in our quest to find the World's Best Playing XI, it's time we choose some defenders.

## **World's Best Playing XI: Finding The Best Defenders**

In order to find the best defenders, I'll be using following attributes to fetch the best defenders:

- 1. **Centre Backs:** We need two center-backs. One who plays LCB and the other who plays RCB.
- 2. **Wing Backs:** We again need two wing backs. One who plays on the Left and the other who plays on the right.

```
#Choosing Defenders

df['df_centre_backs'] = ( d*df.Reactions + c*df.Interceptions + d*df.Sliding_Tackle + d*df.Standing_Tackle + d*df.Standing_Tackle + d*df.Standing + d*df.Standing + d*df.Standing + d*df.Marking + c*df.Aggression)/(6*b + df['df_wb_Wing_Backs'] = (b*df.Ball_Control + a*df.Dribbling + a*df.Marking + d*df.Sliding_Tackle + d*df.
```

Based on the above parameters, I'll be predicting 4 best defenders: 2 Centre backs and 2 wing back and right centre back.



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## LEFT CENTRAL DEFENDER:

```
plt.figure(figsize=(15,6))
sd = df[(df['Club_Position'] == 'LCB')].sort_values('df_centre_backs', asc
x2 = np.array(list(sd['Name']))
y2 = np.array(list(sd['df_centre_backs']))
sns.barplot(x2, y2, palette=sns.color_palette("Blues_d"))
plt.ylabel("LCB Score")
```

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Based on the left centre back characteristics, it can be inferred that *Sergio Ramos is the Best Left Central Defender*. Let us now plot the RCB as well.

## **RIGHT CENTRAL DEFENDER:**

```
plt.figure(figsize=(15,6))

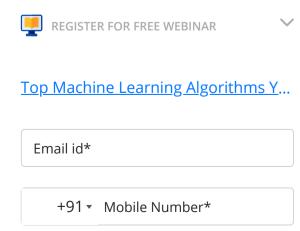
sd = df[(df['Club_Position'] == 'RCB')].sort_values('df_centre_backs', ascending=False)[:5]

x2 = np.array(list(sd['Name']))

y2 = np.array(list(sd['df_centre_backs']))

sns.barplot(x2, y2, palette=sns.color_palette("Blues_d"))

plt.ylabel("RCB Score")
```





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Based on the right centre back characteristics, it can be inferred that *Azpilicueta is the Best Right Central Defender*. Next, let us pick the World's best left wing back/ left back.

### LEFT WING BACK

```
plt.figure(figsize=(15,6))

sd = df[(df['Club_Position'] == 'LWB') | (df['Club_Position'] == 'LB')].sc

x4 = np.array(list(sd['Name']))
y4 = np.array(list(sd['df_wb_Wing_Backs']))
sns.barplot(x4, y4, palette=sns.color_palette("Blues_d"))
plt.ylabel("Left Back Score")

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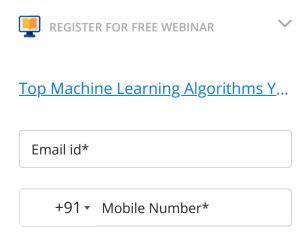
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```

Since David Alaba's team does not qualify in the world cup 2018, I'll be picking *Alex Sandro as the best LWB/LB defender*.

Next, let us now find out who is the best right wing back/ right back.

### **RIGHT WING BACK:**

As per the above analysis, it is evident that *Kyle Walker is the best RWB/RB for World Cup 2018*. Having said that, below is the list of the best defenders for this World Cup 2018:



Moving ahead with the World's Best Playing XI, it's time we choose some midfielders.

## **World's Best Playing XI: Finding The Best Mid-Fielders**

As per my game formation 4-3-3, I have to choose 3 midfielders. In order to find these, I'll be analyzing the data for the below mentioned parameters:

- 1. *Playmaker*: A playmaker is someone who will move the ball to the attacking 3rd from defence or midfield.
- 2. *Beast*: A beast is a typical box-to-box player with loads of energy and who can boss the midfield.
- 3. *Controller*. A controller is the person who is orchestrating your midfield engine by either sitting back or going forward based on dynamic needs.

```
#Midfielding Indices

df['mf_playmaker'] = (d*df.Ball_Control + d*df.Dribbling + a*df.Marking +

df['mf_beast'] = (d*df.Agility + c*df.Balance + b*df.Jumping + c*df.Streng

df['mf_controller'] = (b*df.Weak_foot + d*df.Ball_Control + a*df.Dribbling

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Let us plot each one of them.

PLAYMAKER:

#Midfielding Indices

df['mf_playmaker'] = (d*df.Ball_Control + d*df.Dribbling + a*df.Marking +

df['mf_beast'] = (d*df.Agility + c*df.Ballance + b*df.Jumping + c*df.Streng

df['mf_controller'] = (b*df.Weak_foot + d*df.Ball_Control + a*df.Dribbling

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PLAYMAKER:
```

```
plt.figure(figsize=(15,6))

ss = df[(df['Club_Position'] == 'CAM') | (df['Club_Position'] == 'LAM') | (df['Club_Position'] == 'RAM')

x3 = np.array(list(ss['Name']))

y3 = np.array(list(ss['mf_playmaker']))

sns.barplot(x3, y3, palette=sns.diverging_palette(145, 280, s=85, l=25, n=5))

plt.ylabel("PlayMaker Score")
```

As per the above analysis, I'll pick *Mesut Ozil as the best Playmaker for World Cup 2018*. Next, let me pick the World's best Beast or Centre midfielder.

### **Beast:**

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As per the above analysis, I'll pick *N' Golo Kante as the best Beast/ Right Central Midfielder*. Next, let us pick the World's best controller.

### **Controller:**

```
plt.figure(figsize=(15,6))

# Generate some sequential data
ss = df[(df['Club_Position'] == 'LCM') | (df['Club_Position'] == 'LM')].sort_values('mf_controller', asc
x1 = np.array(list(ss['Name']))
y1 = np.array(list(ss['mf_controller']))
sns.barplot(x1, y1, palette=sns.diverging_palette(145, 280, s=85, l=25, n=5))
plt.ylabel("Controller Score")
```



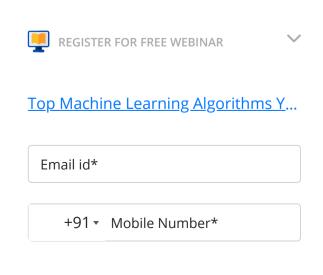
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As per the above analysis, I'll pick *Iniesta as the best controller/ Left Central Midfielder*.

Having said that, below is the list of the best mid-fielders for this World Cup 2018:



Moving ahead with the World's Best Playing XI, it's time we choose attackers.

## **World's Best Playing XI: Finding The Best Attackers**

In order to find the best attacker, I'll be analyzing the below mentioned parameters:

- 1. **Attacking Left Wing:** He is a player, attacking from the left flank.
- 2. **Attacking Right Wing:** He is a player, attacking from the right flank.
- 3. **Striker:** He is a player attacking from the center.

```
#Attackers

df['att_left_wing'] = (c*df.Weak_foot + c*df.Ball_Control + c*df.Dribbling + c*df.Speed + d*df.Accelerat df['att_right_wing'] = (c*df.Weak_foot + c*df.Ball_Control + c*df.Dribbling + c*df.Speed + d*df.Accelerat df['att_striker'] = (b*df.Weak_foot + b*df.Ball_Control + a*df.Vision + b*df.Aggression + b*df.Agilitv + REGISTER FOR FREE WEBINAR
```

Let us plot all of them and find the best attackers in the world for our best XI.

```
plt.figure(figsize=(15,6))

ss = df[(df['Club_Position'] == 'LW') | (df['Club_Position'] == 'LM') | (
x1 = np.array(list(ss['Name']))
y1 = np.array(list(ss['att_left_wing']))
sns.barplot(x1, y1, palette=sns.diverging_palette(255, 133, l=60, n=5, cer
plt.ylabel("Left Wing")
```

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It's quite evident from the above plot that *Ronaldo is the best Left Wing Attacker for World Cup 2018.* 

Next, let us plot the right wing attacker.

```
plt.figure(figsize=(15,6))

ss = df[(df['Club_Position'] == 'RW') | (df['Club_Position'] == 'RM') | (df['Club_Position'] == 'RS')].s

x2 = np.array(list(ss['Name']))

y2 = np.array(list(ss['att_right_wing']))

sns.barplot(x2, y2, palette=sns.diverging_palette(255, 133, l=60, n=5, center="dark"))

plt.ylabel("Right Wing")
```



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As per the above analysis, I'll pick *Lionel Messi as the right wing attacker for World Cup 2018*.

Moving ahead with the World's Best Playing XI, it's time we choose our striker.

## STRIKER:

```
plt.figure(figsize=(15,6))
ss = df[(df['Club_Position'] == 'ST') | (df['Club_Position'] == 'LS') | (df['Club_Position'] == 'RS') |
x3 = np.array(list(ss['Name']))
y3 = np.array(list(ss['att_striker']))
sns.barplot(x3, y3, palette=sns.diverging_palette(255, 133, l=60, n=5, center="dark"))
plt.ylabel("Striker")
```

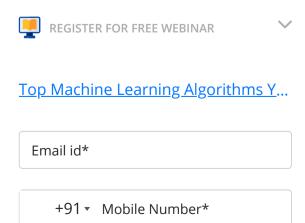


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```

As per the above analysis, the best striker for World Cup 2018 would be *Robert Lewandowski*. Having said that, below is the list of the best attackers in the world:



| this brings us to the end o<br>orld Cup 2018 in the 4-3-3 li | de our analysis, th | e below image re | oresents the W | orld's Best Playing X | (I for the |
|--|---------------------|------------------|----------------|-----------------------|------------|
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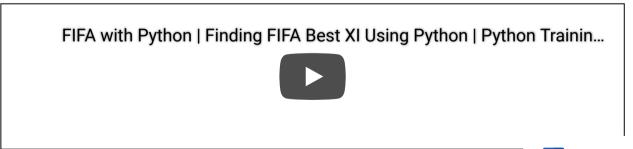
Analyzing FIFA World Cup 2018 Best XI using Python | Edureka

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I hope you like the results! :-) Here is a video also on analyzing FIFA dataset using python to find out World Best XI for World Cup 2018.

## Finding FIFA World Cup 2018 Best XI Using Python | Analyzing FIFA World Cup Data | Edureka



Also, note that the list of players and the formation is based on my opinion only and you different opinion. So, if you do have a different opinion, do *let me know about your best XI i* If you know any other applications or trending technologies in FIFA or sports, in general, do comments section below. Be sure to subscribe to our blog and stay tuned for more blogs by E

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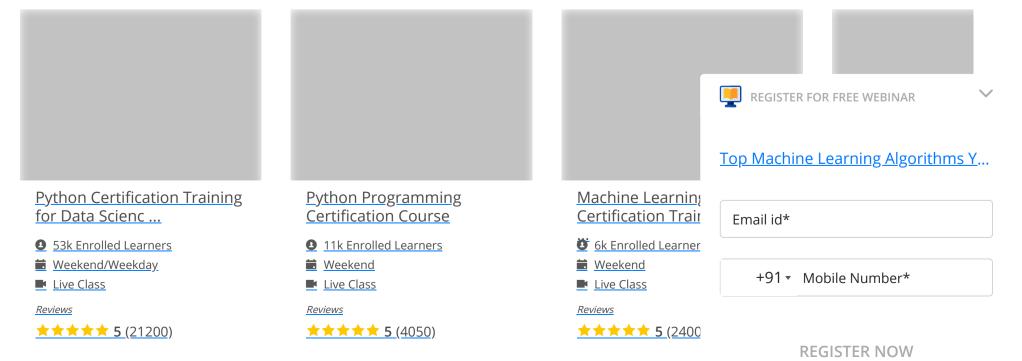
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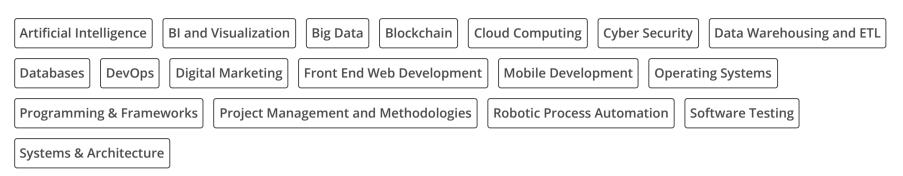
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