```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

df = pd.read_csv("Ai_impact_on_jobs_2030.csv")

df.head()
```

```
             Job_Title  Average_Salary  Years_Experience
Education_Level  \
0       Security Guard           45795                28
Master's
1   Research Scientist          133355                20
PhD
2  Construction Worker          146216                 2     High
School
3    Software Engineer          136530                13
PhD
4    Financial Analyst           70397                22     High
School

   AI_Exposure_Index  Tech_Growth_Factor  Automation_Probability_2030
\
0               0.18                1.28                         0.85

1               0.62                1.11                         0.05

2               0.86                1.18                         0.81

3               0.39                0.68                         0.60

4               0.52                1.46                         0.64


  Risk_Category  Skill_1  Skill_2  Skill_3  Skill_4  Skill_5  Skill_6
\
0          High     0.45     0.10     0.46     0.33     0.14     0.65

1           Low     0.02     0.52     0.40     0.05     0.97     0.23

2          High     0.01     0.94     0.56     0.39     0.02     0.23

3        Medium     0.43     0.21     0.57     0.03     0.84     0.45

4        Medium     0.75     0.54     0.59     0.97     0.61     0.28


   Skill_7  Skill_8  Skill_9  Skill_10
0     0.06     0.72     0.94      0.00
1     0.09     0.62     0.38      0.98
```

```
2     0.24     0.68     0.61      0.83
3     0.40     0.93     0.73      0.33
4     0.30     0.17     0.02      0.42
```

Job Risk Distribution

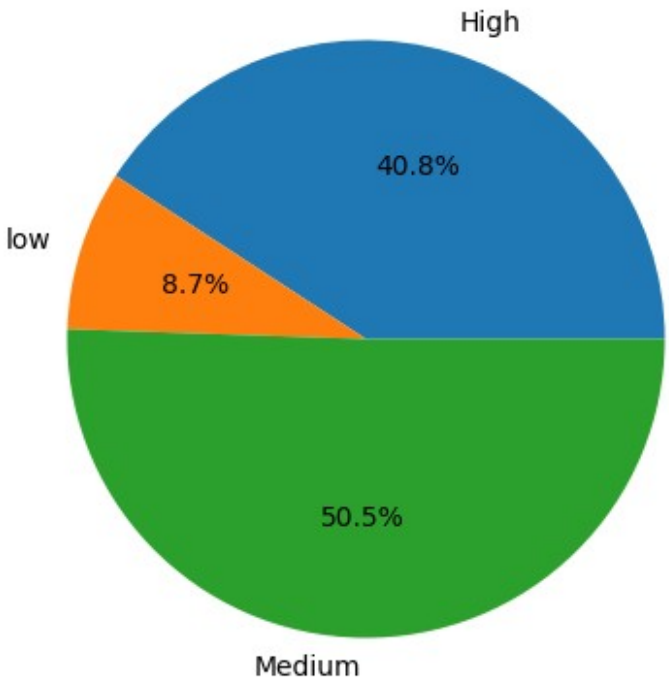
What percentage of jobs fall into Low, Medium, and High automation risk categories?

```
categories_sum = df.groupby('Risk_Category')
['Automation_Probability_2030'].sum()
categories_sum
```

```
Risk_Category
High      613.83
Low       130.51
Medium    760.17
Name: Automation_Probability_2030, dtype: float64
```

```
percentage_categories = (categories_sum/categories_sum.sum())*100
labels = ["High" , "low" , "Medium"]

fig = plt.figure(figsize=(5, 5))
plt.pie(percentage_categories, labels = labels ,  autopct = "%1.1f%%")
plt.show()
```



```
# High = 40% , Low = 8% , Medium = 50%
```

Which job titles dominate each risk category?

```
dominate_category = df.groupby('Job_Title')
['Risk_Category'].count().sort_values( ascending=False)

#Software Engineer, Data Scientist, and UX Researcher are the top job
titles across risk categories, showing they dominate in frequency.
```

Salary Landscape Analysis

How does average salary vary across different education levels?

```
df.groupby('Education_Level')
['Average_Salary'].mean().sort_values(ascending=False)
```

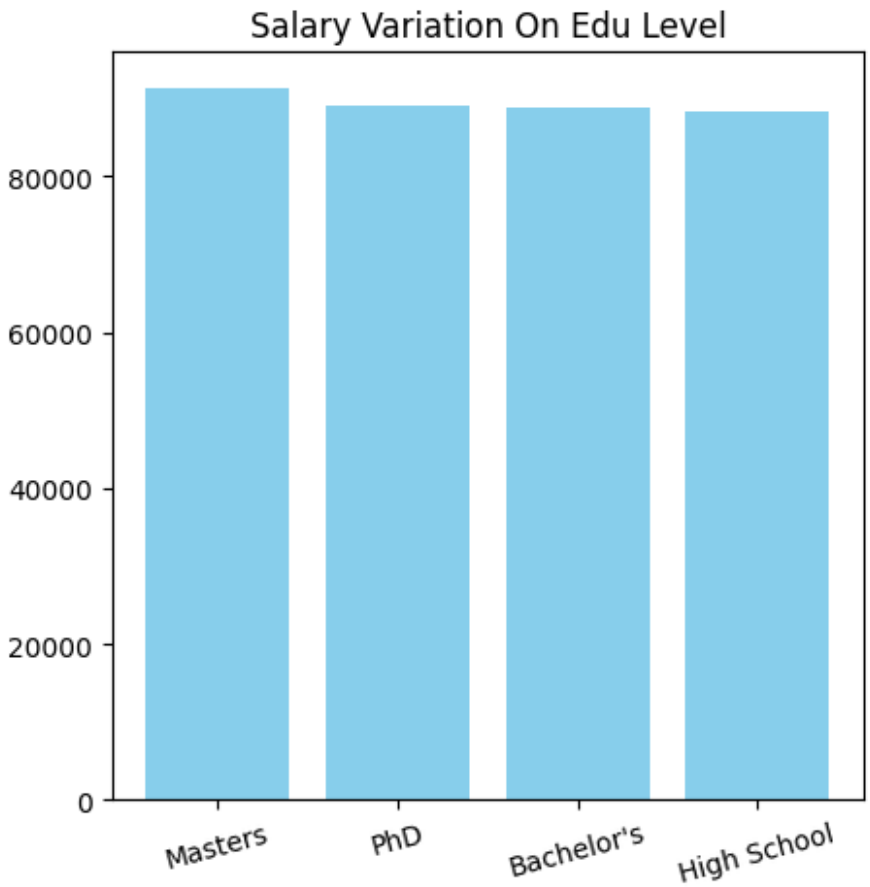
```
Education_Level
Master's       91318.564626
PhD            89045.575419
Bachelor's     88815.495425
High School    88389.293367
Name: Average_Salary, dtype: float64
```

```
salary_variation = {
    "Masters" : 91318.564626 ,
    "PhD" : 89045.575419 ,
    "Bachelor's" : 88815.495425,
    "High School" : 88389.293367

}

labels = list(salary_variation.keys())
values = list(salary_variation.values())

plt.figure(figsize = (5,5))
plt.bar(labels , values , color = "skyblue")
plt.title("Salary Variation On Edu Level")
plt.ylabel = ("Average_salary")
plt.xlabel = ("Education_Level")
plt.xticks(rotation=15)
plt.show()
```




```
#Individuals with higher education levels tend to earn more, with
Master's degree holders having the highest average salary.
```

Are higher-paying jobs always less exposed to automation?

```
df['higher_paying_jobs'] = df['Average_Salary'].sort_values(ascending
= False)

result = df[['higher_paying_jobs' , 'Automation_Probability_2030']]


#Higher-paying jobs are not always less exposed to automation some
well-paid roles still face high automation risk.
```

Experience vs Salary

Is there a relationship between years of experience and average salary?

```
vk = df[['Average_Salary' , 'Years_Experience']]
```

```
realtionship = vk.corr()

sns.heatmap(realtionship, annot=True, cmap='coolwarm', fmt=".2f")
```

```
<Axes: >
```


```
#There is no meaningful relationship between years of experience and
average salary in this dataset—correlation is nearly zero.
```

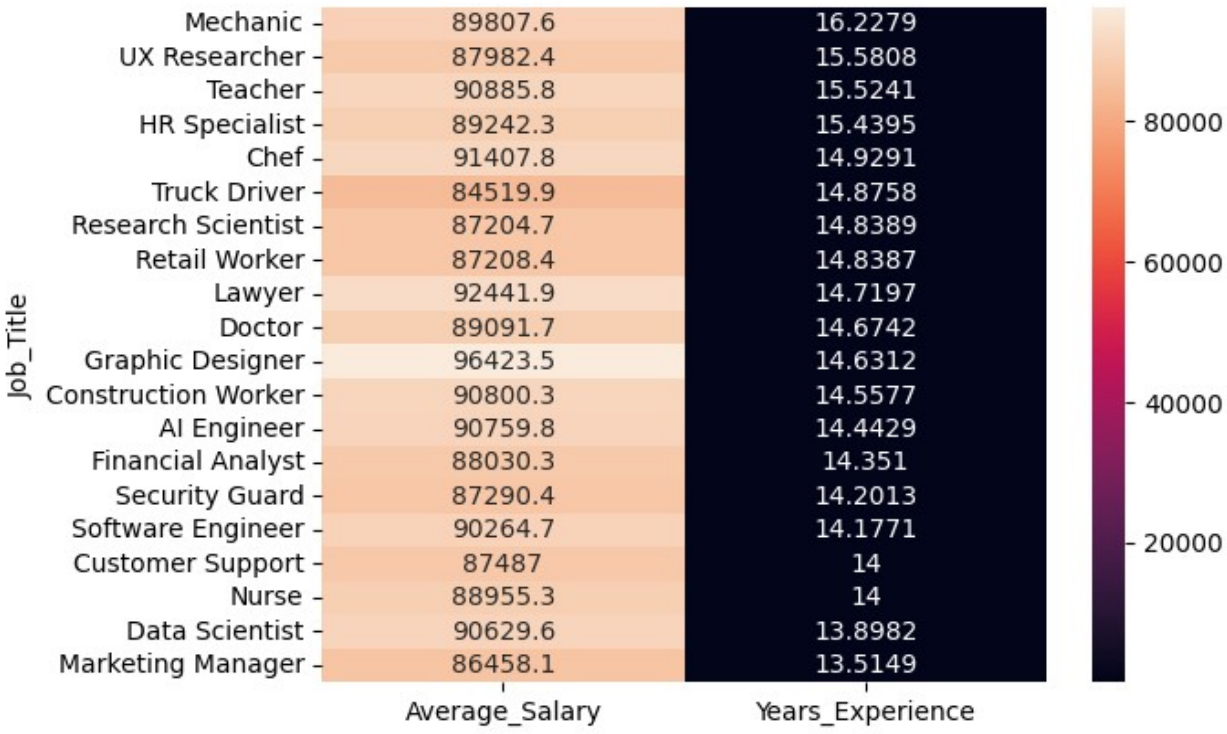
Identify roles where experience does not significantly increase salary.

```
gp = df.groupby("Job_Title").agg({"Average_Salary" : 'mean' ,
"Years_Experience" : 'mean'})

gp2 = gp.sort_values(by=['Years_Experience', 'Average_Salary'],
                ascending=[False, True])


sns.heatmap(gp2 , annot = True , fmt = 'g')
```

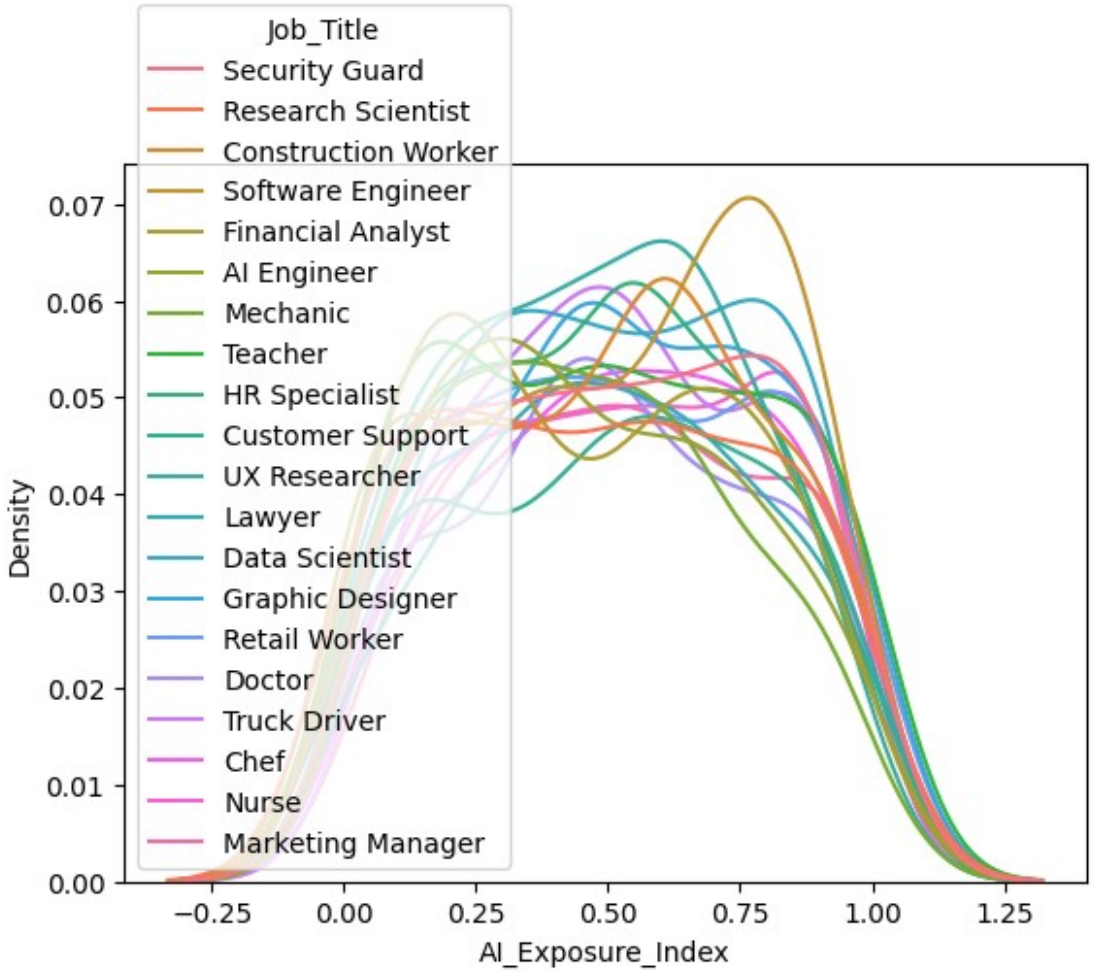
```
<Axes: ylabel='Job_Title'>
```



AI Exposure Overview

What is the distribution of the AI Exposure Index across all jobs?

```
sns.kdeplot(data=df, x='AI_Exposure_Index', hue='Job_Title')
plt.show()
```




```
f = df.sort_values(by = ['AI_Exposure_Index' , 'Job_Title'] ,
ascending = [False , True])

f.loc [ f ['AI_Exposure_Index'] == 1 ].head(18)
```

	Job_Title	Average_Salary	Years_Experience	Education_Level
393	Chef	45994	15	Master's
435	Chef	82066	10	Bachelor's
1504	Chef	140839	16	High School
2415	Construction Worker	127891	23	PhD
1372	Data Scientist	147511	0	High School
1185	Graphic Designer	35136	17	Master's
2583	Graphic Designer	147342	14	High

```
School
2000        HR Specialist           62256                  25
PhD
832                Lawyer           38699                   3     High
School
921                Lawyer          139875                   5
Bachelor's
778     Marketing Manager          104638                  10
Master's
2212             Mechanic           39413                   1
Master's
1239       Security Guard          115062                   6
Bachelor's
1381        UX Researcher           35922                  23
Bachelor's

      AI_Exposure_Index  Tech_Growth_Factor
Automation_Probability_2030  \
393                  1.0                0.72
0.34
435                  1.0                1.30
0.61
1504                 1.0                0.53
0.33
2415                 1.0                0.51
0.74
1372                 1.0                0.76
0.59
1185                 1.0                1.25
0.55
2583                 1.0                1.27
0.63
2000                 1.0                1.25
0.40
832                  1.0                0.88
0.54
921                  1.0                0.50
0.31
778                  1.0                0.67
0.61
2212                 1.0                1.20
0.61
1239                 1.0                1.10
0.71
1381                 1.0                1.45
0.54

     Risk_Category  Skill_1  Skill_2  Skill_3  Skill_4  Skill_5
Skill_6  \
```

```
393          Medium     0.59     0.49     0.52     0.67     0.27
0.91
435          Medium     0.51     0.30     0.15     0.28     0.38
0.76
1504         Medium     0.08     0.74     0.14     0.62     0.32
0.46
2415           High     0.84     0.10     0.03     0.12     0.69
0.99
1372         Medium     0.55     0.31     0.16     0.90     0.60
0.82
1185         Medium     0.42     0.62     0.34     0.03     0.40
0.93
2583         Medium     0.03     0.06     0.71     0.19     0.43
0.18
2000         Medium     0.95     0.21     0.73     0.12     0.65
0.76
832          Medium     0.86     0.12     0.69     0.41     0.21
0.40
921          Medium     0.82     0.20     0.06     0.24     0.43
0.73
778          Medium     0.22     0.08     0.87     0.86     0.40
0.70
2212         Medium     0.40     0.91     0.55     0.68     0.09
0.63
1239           High     0.08     0.48     0.41     0.61     0.44
0.93
1381         Medium     0.14     0.26     0.36     0.87     0.17
0.22

      Skill_7  Skill_8  Skill_9  Skill_10  higher_paying_jobs
393      0.44     0.13     0.74      0.64               45994
435      0.54     0.08     0.02      0.10               82066
1504     0.22     0.87     0.59      0.94              140839
2415     0.59     0.12     0.18      0.54              127891
1372     0.55     0.22     0.34      0.38              147511
1185     0.63     0.08     0.88      0.27               35136
2583     0.18     0.11     0.59      0.74              147342
2000     0.86     0.73     0.92      0.52               62256
832      0.08     0.70     0.25      0.31               38699
921      0.62     0.24     0.50      0.93              139875
778      0.56     0.85     0.32      0.52              104638
2212     0.88     0.18     0.74      0.03               39413
1239     0.53     0.69     0.90      0.15              115062
1381     0.35     0.93     0.50      0.65               35922

#Jobs like chef , Construction Worker  , Data Scientist      , Graphic
Designer ,HR Specialist , Lawyer , Marketing Manager ,  Mechanic
      ,Security Guard, UX Researcher   have the highest AI exposure.

np.float64(1.0)
```

Which jobs are most and least exposed to AI?

```
gf = df.sort_values(by = ['AI_Exposure_Index' , 'Job_Title'] ,
ascending = [True , True])

f.loc [ f ['AI_Exposure_Index'] == 0.0 ].head(14)
```

```
                Job_Title  Average_Salary  Years_Experience
Education_Level  \
930   Construction Worker          109023                28
Bachelor's
2417  Construction Worker          130621                21     High
School
818        Data Scientist           93766                10
PhD
1915       Data Scientist          132567                 4
Bachelor's
2438       Data Scientist          145632                18
PhD
1473     Graphic Designer           80281                 6
Bachelor's
1828               Lawyer          101160                 3     High
School
185                 Nurse          119678                24     High
School
1329   Research Scientist           57774                12
Bachelor's
1389   Research Scientist           83565                 2     High
School
303     Software Engineer          143880                18
Master's
1349              Teacher          144621                 5     High
School

      AI_Exposure_Index  Tech_Growth_Factor
Automation_Probability_2030  \
930                 0.0                0.84
0.94
2417                0.0                1.31
0.74
818                 0.0                1.43
0.44
1915                0.0                1.20
0.52
2438                0.0                1.21
0.59
1473                0.0                1.10
0.48
1828                0.0                0.74
0.32
```

```
185                 0.0                 1.01
0.06
1329                0.0                 1.05
0.11
1389                0.0                 0.61
0.14
303                 0.0                 1.11
0.55
1349                0.0                 1.37
0.26

     Risk_Category  Skill_1  Skill_2  Skill_3  Skill_4  Skill_5
Skill_6  \
930           High     0.69     0.40     0.19     0.36     0.17
0.11
2417          High     0.77     0.15     0.42     0.73     0.27
0.31
818         Medium     0.40     0.17     0.38     0.80     0.80
0.94
1915        Medium     0.21     0.23     0.81     0.50     0.70
0.45
2438        Medium     0.44     0.34     0.84     0.78     0.98
0.37
1473        Medium     0.53     0.54     0.18     0.77     0.56
0.27
1828        Medium     0.11     0.53     0.04     0.18     0.23
0.66
185            Low     0.28     0.71     0.06     0.84     0.00
0.25
1329           Low     0.75     0.45     0.68     0.85     0.54
0.34
1389           Low     0.05     0.13     0.23     0.43     0.71
0.13
303         Medium     0.46     0.40     0.46     0.41     0.73
0.14
1349           Low     0.12     0.37     0.66     0.65     0.86
0.14

      Skill_7  Skill_8  Skill_9  Skill_10  higher_paying_jobs
930      0.91     1.00     0.16      0.05              109023
2417     0.67     0.19     0.95      0.19              130621
818      0.40     0.71     0.51      0.80               93766
1915     0.24     0.97     0.57      0.13              132567
2438     0.91     0.09     0.41      0.47              145632
1473     0.94     0.01     0.73      0.38               80281
1828     0.47     0.46     0.77      0.46              101160
185      0.74     0.32     0.10      0.36              119678
1329     0.77     0.27     0.89      0.07               57774
1389     0.74     0.86     0.65      0.04               83565
```

```
303      0.20     0.18     0.26      0.53              143880
1349     0.43     0.10     0.39      0.02              144621

# #Jobs like chef , Construction Worker, Data Scientis , Graphic
Designer , Lawyer , Teacher , Nurse , Research Scientist, Software
Engineer   have the least  AI exposure.
```