

```
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

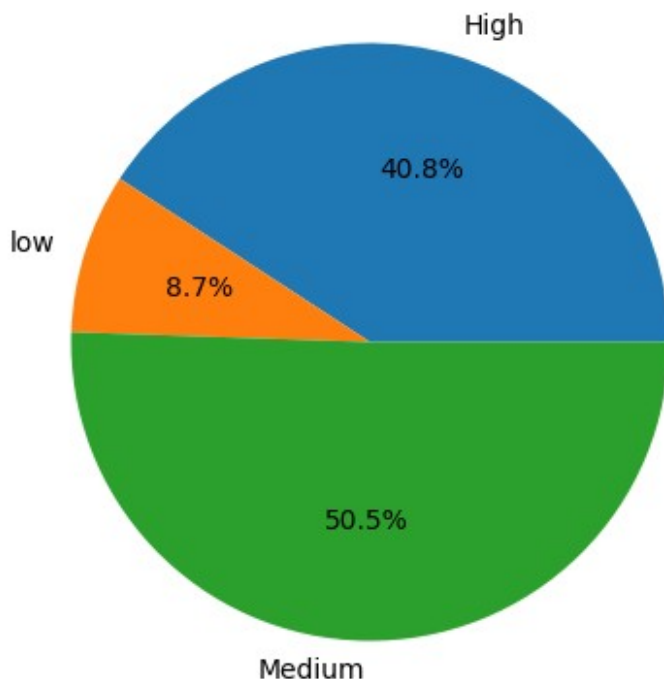
What percentage of jobs fall into Low, Medium, and High automation risk categories?

```
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(percentages_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?

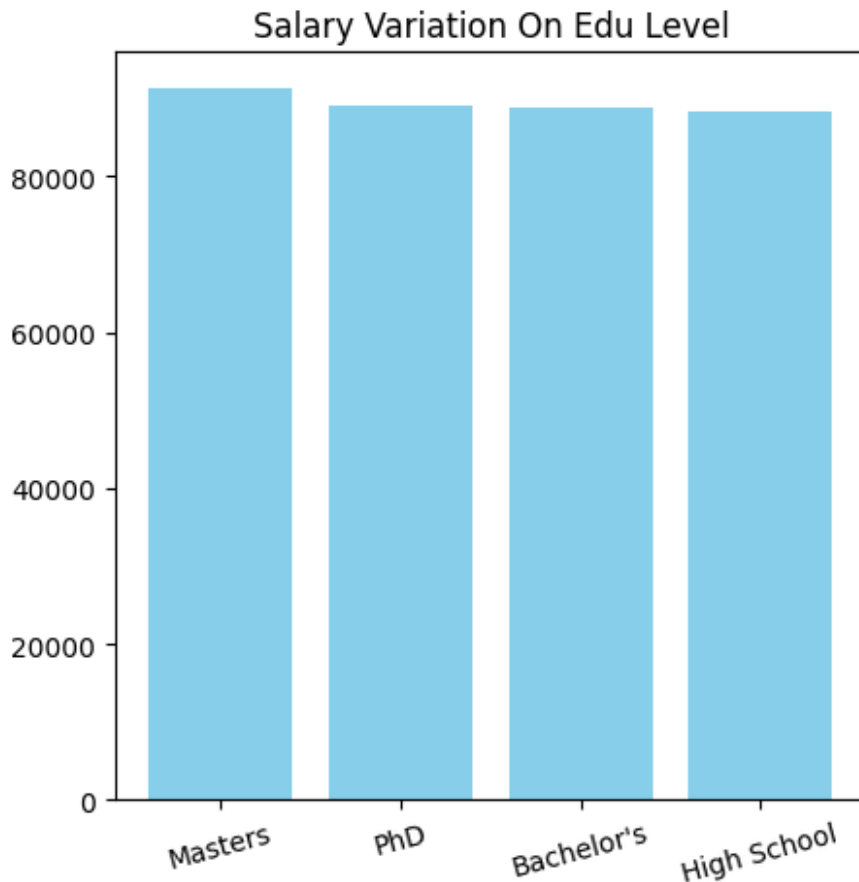
```
df.groupby('Education_Level')
['Average_Salary'].mean().sort_values(ascending=False)

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: >
```



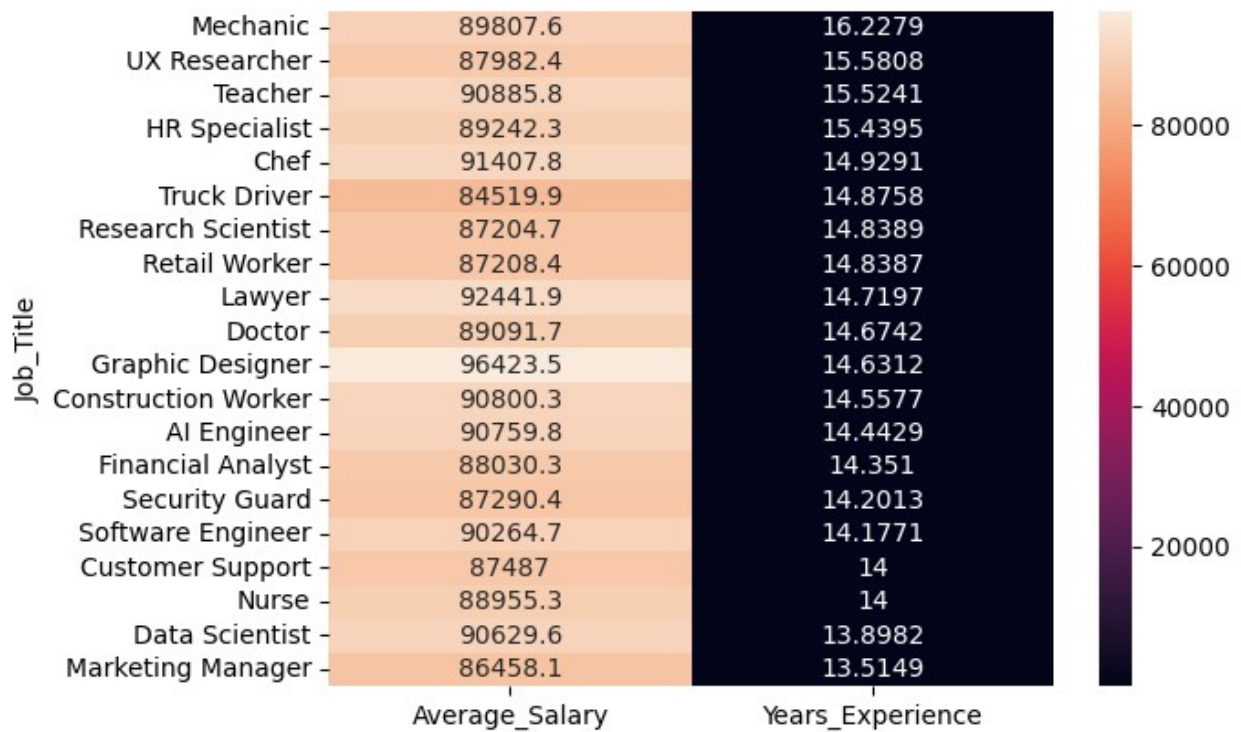
#There is no meaningful relationship between years of experience and average salary in this dataset—correlation is nearly zero.

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])

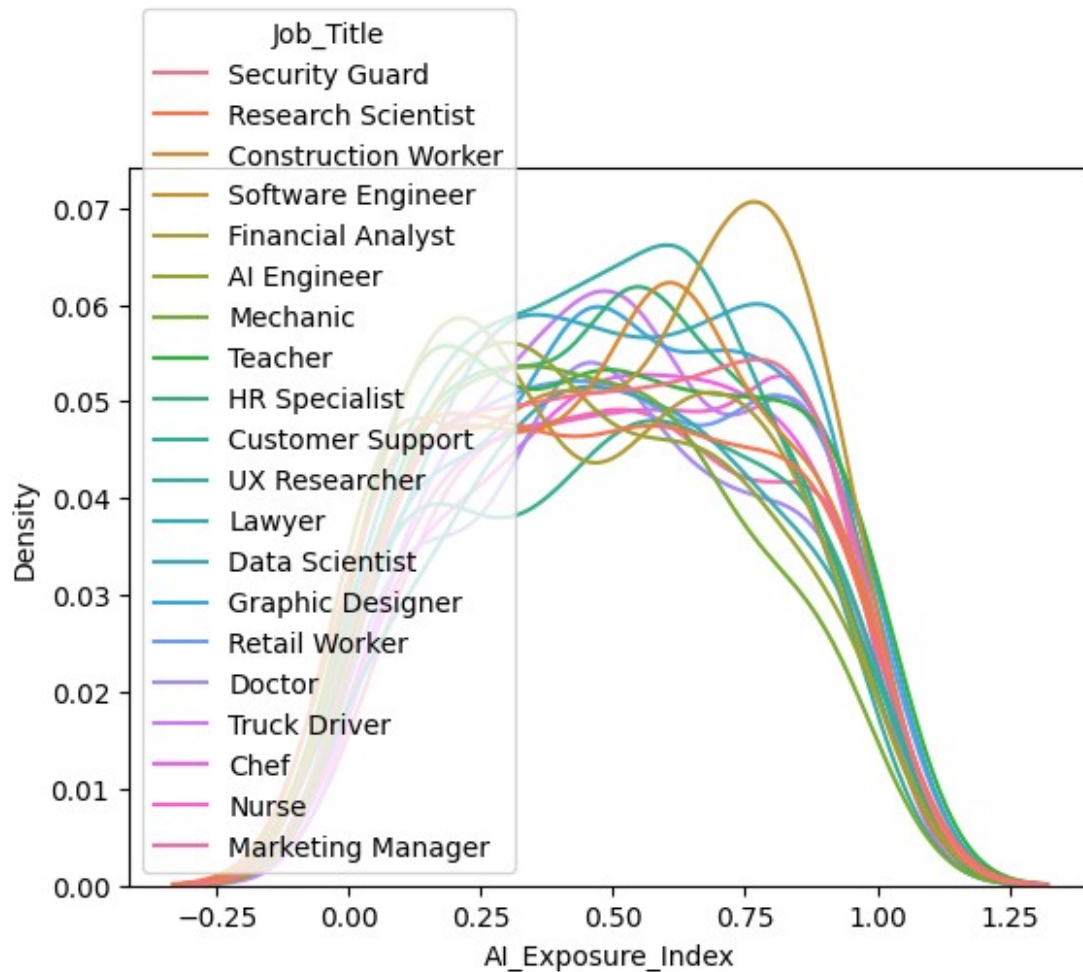
sns.heatmap(gp2 , annot = True , fmt = 'g')
<Axes: ylabel='Job_Title'>
```



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)
```

Education_Level	Job_Title	Average_Salary	Years_Experience	
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.