

AI's Global Impact: Industry-Wide Insights Through Data

This project explores the multifaceted influence of artificial intelligence across global industries using a comprehensive dataset of 200 observations spanning countries, industries, and key metrics from 2020 to 2025.

Through exploratory data analysis and visualization with Python (Seaborn, Matplotlib, Statsmodels), the project uncovers how AI adoption affects job displacement, revenue growth, content generation, and human-AI collaboration. Key relationships—such as the correlation between AI adoption and job loss, or shifts in consumer trust over time—are visualized using dual-axis plots, violin plots, and time trends.

This analysis helps stakeholders, from policymakers to tech leaders, better understand where AI is accelerating value—and where it raises concern.

Key Focus Areas:

AI adoption rates by country and industry

Job loss vs. revenue gains from AI

Consumer trust trends

Regulation status and tool usage

Human-AI collaboration metrics

 Tech stack: Python, Pandas, Seaborn, Matplotlib, Statsmodels  Data: AI Content Impact Dataset (200 entries, 12 features)

IMPORTING PACKAGES AND DATA

```
In [1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import statsmodels.api as sm
sns.set
import warnings
warnings.filterwarnings("ignore")
```

```
In [2]: df = pd.read_csv('C:/Users/mohah/Downloads/Global_AI_Content_Impact_Dataset.csv')
df.head()
```

Out[2]:

	Country	Year	Industry	AI Adoption Rate (%)	AI-Generated Content Volume (TBs per year)	Job Loss Due to AI (%)	Revenue Increase Due to AI (%)	Human-AI Collaboration Rate (%)	Trust in AI Tools
0	South Korea	2022	Media	44.29	33.09	16.77	46.12	74.79	
1	China	2025	Legal	34.75	66.74	46.89	52.46	26.17	Dislike
2	USA	2022	Automotive	81.06	96.13	10.66	45.60	39.66	Strong Diff
3	France	2021	Legal	85.24	93.76	27.70	78.24	29.45	Confidence
4	France	2021	Gaming	78.95	45.62	17.45	1.05	21.70	Midjourney

EXPLORATORY DATA ANALYSIS

In [3]: df.describe()

Out[3]:

	Year	AI Adoption Rate (%)	AI-Generated Content Volume (TBs per year)	Job Loss Due to AI (%)	Revenue Increase Due to AI (%)	Human-AI Collaboration Rate (%)	Consumer Trust in AI (%)
count	200.000000	200.000000	200.000000	200.000000	200.000000	200.000000	200.000000
mean	2022.315000	54.265850	46.07260	25.788250	39.719450	54.102150	59.425000
std	1.825496	24.218067	29.16122	13.901105	23.829545	19.247079	17.319600
min	2020.000000	10.530000	1.04000	0.090000	0.140000	20.210000	30.120000
25%	2021.000000	33.222500	20.32250	14.995000	17.907500	37.770000	44.755000
50%	2022.000000	53.310000	44.32000	25.735000	42.100000	54.515000	59.215000
75%	2024.000000	76.220000	71.62000	37.417500	58.697500	69.402500	74.885000
max	2025.000000	94.760000	99.06000	49.710000	79.550000	88.290000	89.880000

In [4]: df.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 200 entries, 0 to 199
Data columns (total 12 columns):
#   Column                                     Non-Null Count  Dtype
---  -
0   Country                                   200 non-null    object
1   Year                                       200 non-null    int64
2   Industry                                  200 non-null    object
3   AI Adoption Rate (%)                     200 non-null    float64
4   AI-Generated Content Volume (TBs per year) 200 non-null    float64
5   Job Loss Due to AI (%)                   200 non-null    float64
6   Revenue Increase Due to AI (%)           200 non-null    float64
7   Human-AI Collaboration Rate (%)          200 non-null    float64
8   Top AI Tools Used                         200 non-null    object
9   Regulation Status                        200 non-null    object
10  Consumer Trust in AI (%)                  200 non-null    float64
11  Market Share of AI Companies (%)           200 non-null    float64
dtypes: float64(7), int64(1), object(4)
memory usage: 18.9+ KB
```

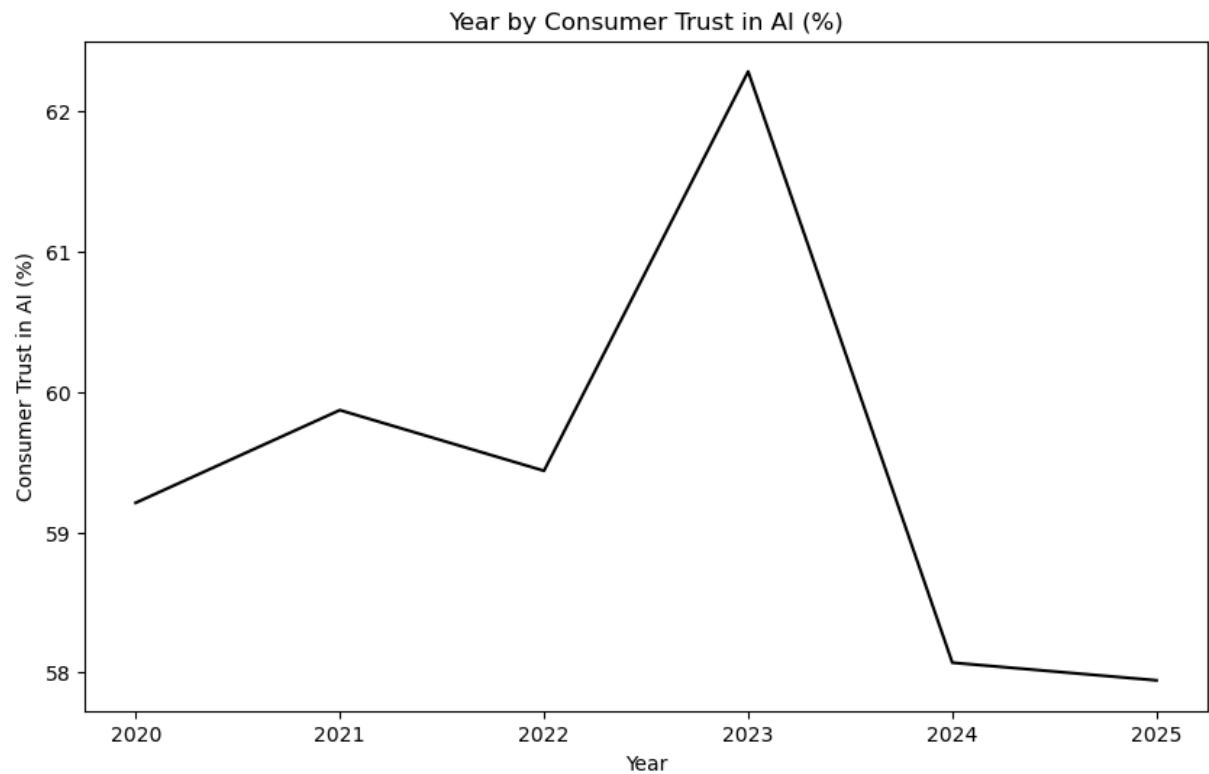
```
In [5]: df[['Human-AI Collaboration Rate (%)','Consumer Trust in AI (%)','Job Loss Due to A
```

Out[5]:

	Human-AI Collaboration Rate (%)	Consumer Trust in AI (%)	Job Loss Due to AI (%)	AI Adoption Rate (%)	Revenue Increase Due to AI (%)
Human-AI Collaboration Rate (%)	1.000000	0.003955	0.021559	0.050359	0.081275
Consumer Trust in AI (%)	0.003955	1.000000	0.082446	-0.115227	0.028598
Job Loss Due to AI (%)	0.021559	0.082446	1.000000	-0.004589	0.152893
AI Adoption Rate (%)	0.050359	-0.115227	-0.004589	1.000000	0.001883
Revenue Increase Due to AI (%)	0.081275	0.028598	0.152893	0.001883	1.000000

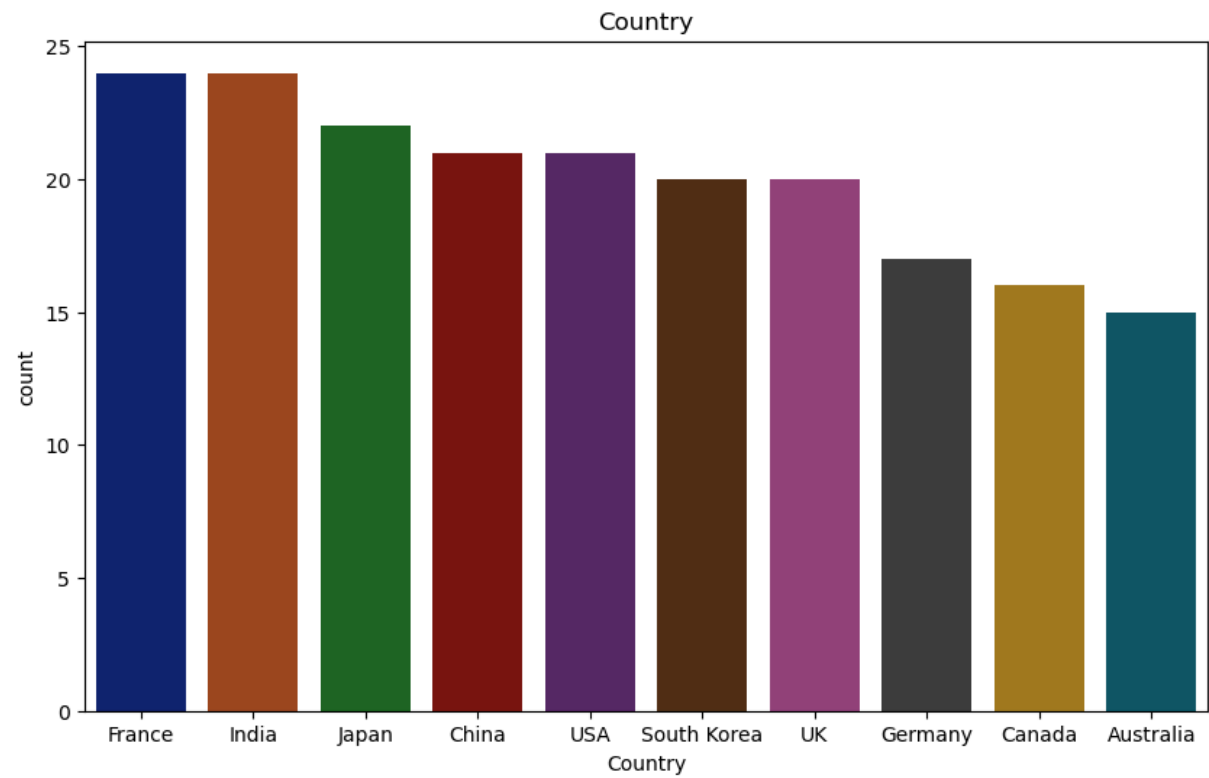
```
In [6]: plt.figure(figsize=(10,6))
sns.lineplot(x='Year',y='Consumer Trust in AI (%)',data=df,color='black',ci=None)
plt.title('Year by Consumer Trust in AI (%)')
```

```
Out[6]: Text(0.5, 1.0, 'Year by Consumer Trust in AI (%)')
```



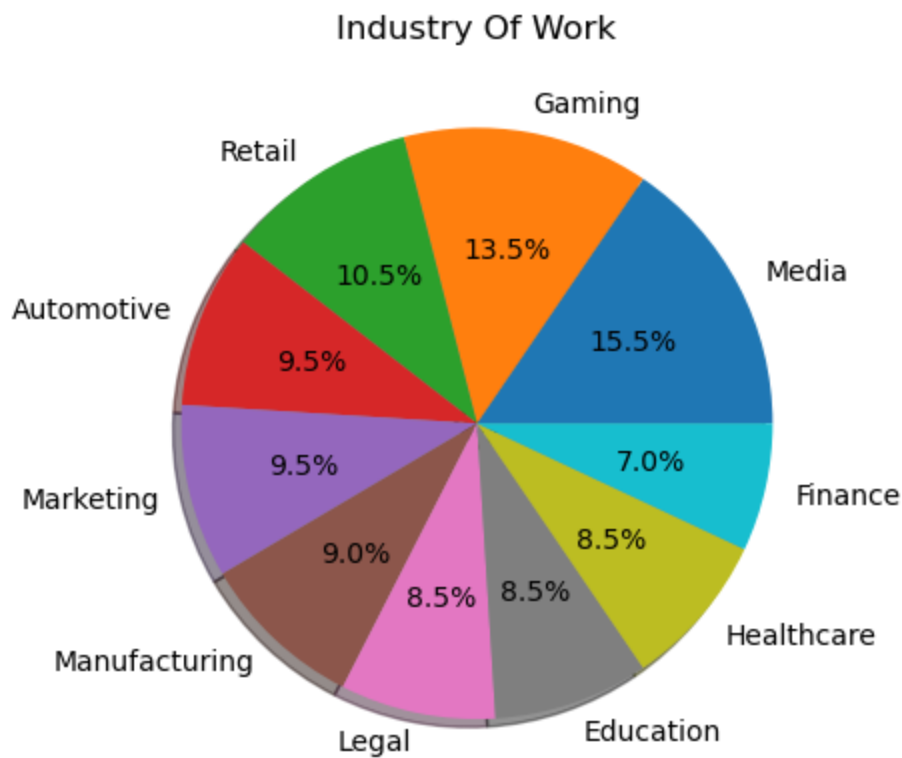
```
In [7]: plt.figure(figsize=(10,6))
order= df['Country'].value_counts().index
sns.countplot(x='Country',data = df,order=order,palette='dark')
plt.title('Country')
```

Out[7]: Text(0.5, 1.0, 'Country')



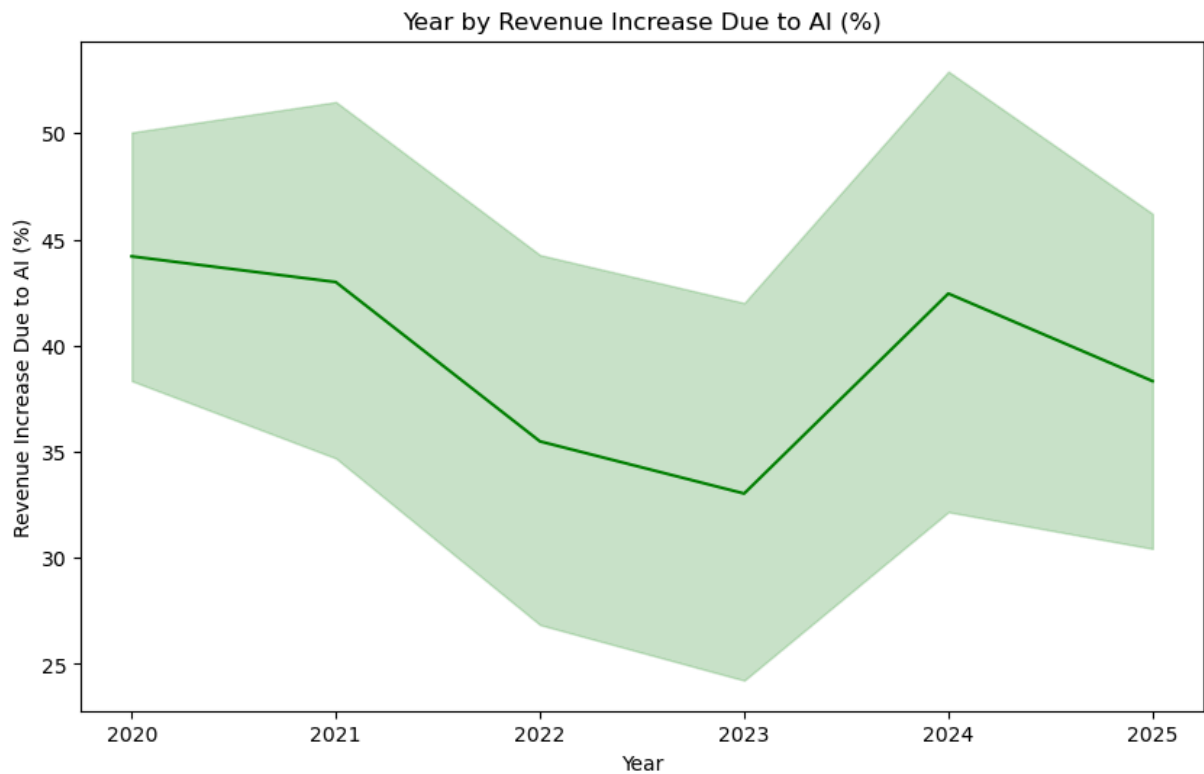
```
In [8]: types = df['Industry'].value_counts()
plt.pie(types, labels=types.index, autopct = '%0.1f%', shadow = True)
plt.title('Industry Of Work')
```

```
Out[8]: Text(0.5, 1.0, 'Industry Of Work')
```



```
In [9]: plt.figure(figsize=(10,6))
sns.lineplot(x='Year',y='Revenue Increase Due to AI (%)',data=df,color='g')
plt.title('Year by Revenue Increase Due to AI (%)')
```

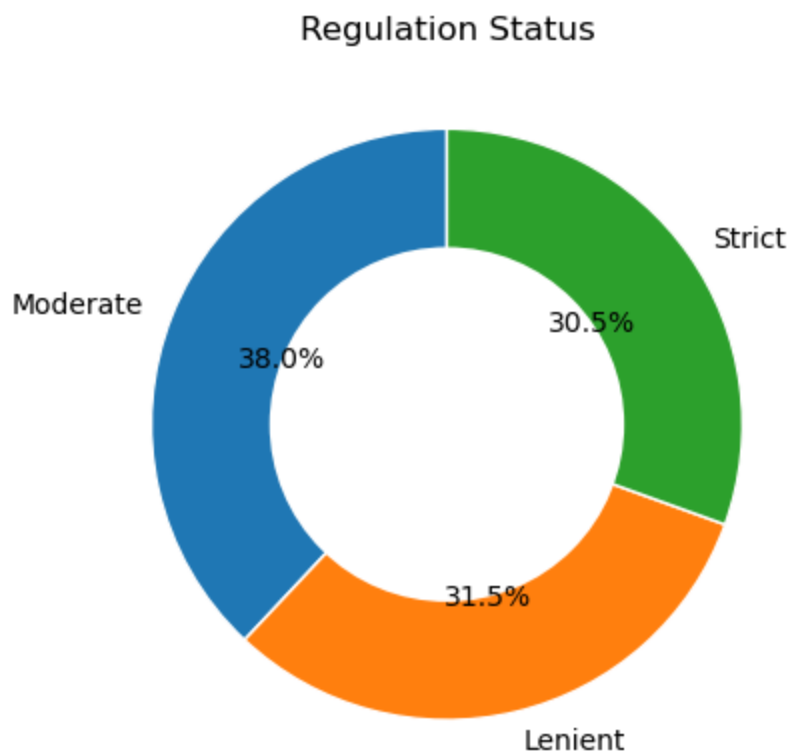
```
Out[9]: Text(0.5, 1.0, 'Year by Revenue Increase Due to AI (%)')
```



```
In [10]: types = df.value_counts('Regulation Status')
plt.pie(types, labels=types.index, autopct='%1.1f%%', startangle=90, wedgeprops={'edgecolor': 'red'})

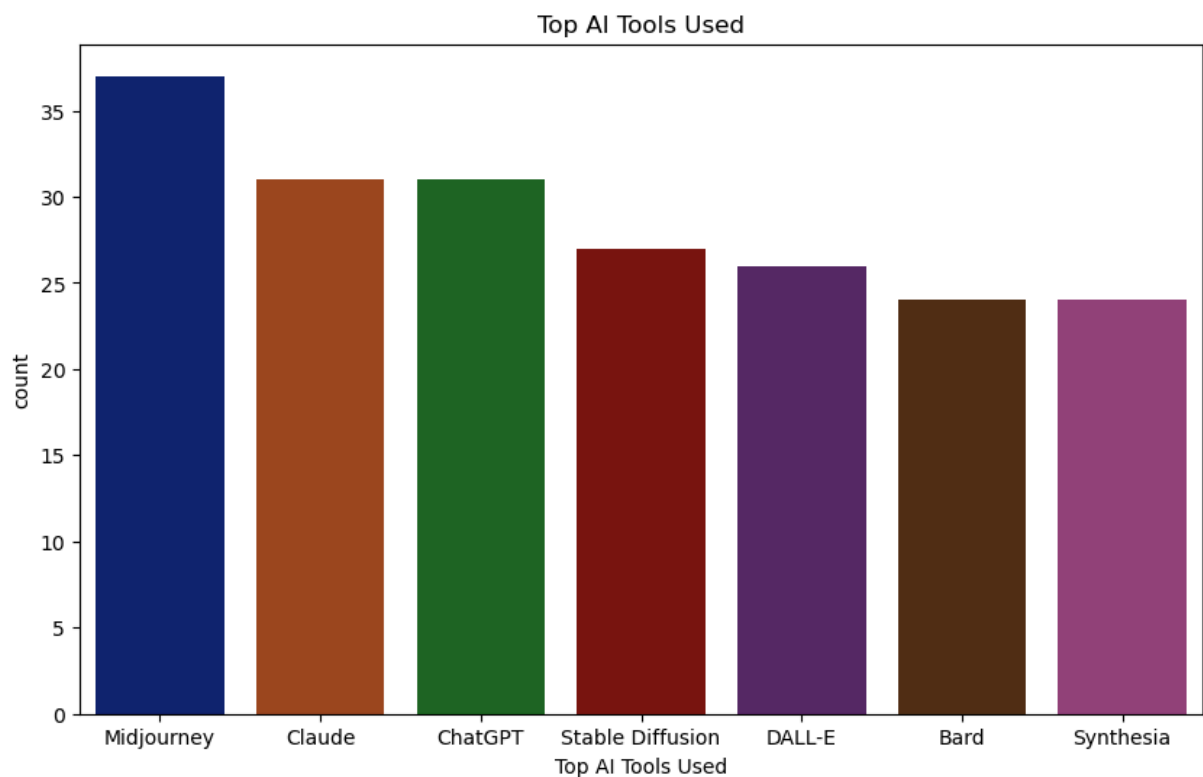
center_circle = plt.Circle((0,0), 0.6, fc='white')
plt.gca().add_artist(center_circle)
plt.title('Regulation Status')
```

```
Out[10]: Text(0.5, 1.0, 'Regulation Status')
```



```
In [11]: plt.figure(figsize=(10,6))
order= df['Top AI Tools Used'].value_counts().index
sns.countplot(x='Top AI Tools Used',data = df,order=order,palette='dark')
plt.title('Top AI Tools Used')
```

Out[11]: Text(0.5, 1.0, 'Top AI Tools Used')



```
In [12]: plt.figure(figsize=(10,6))
fig, ax1 = plt.subplots()

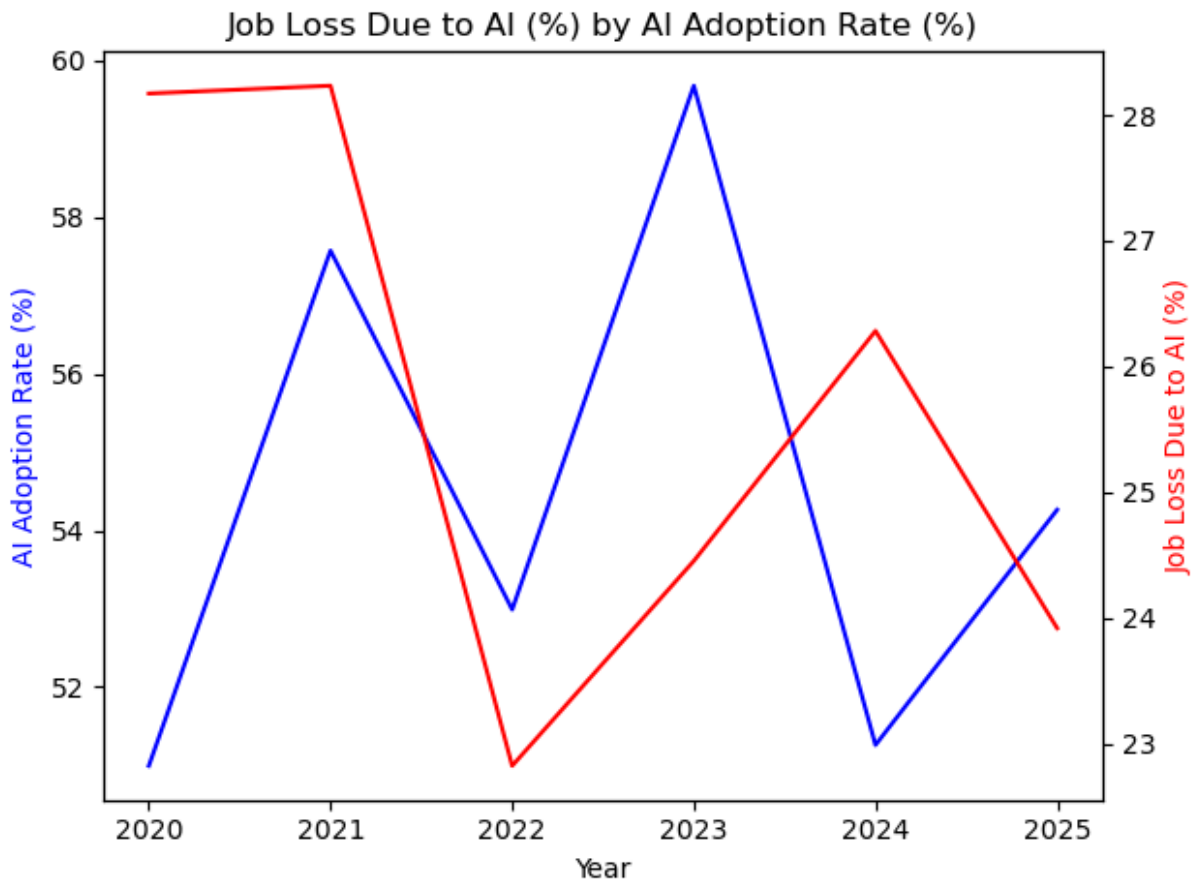
# First line (left y-axis)
sns.lineplot(data=df, x='Year', y='AI Adoption Rate (%)', ax=ax1, color='blue',ci=N
ax1.set_ylabel('AI Adoption Rate (%)', color='blue')

# Create secondary axis
ax2 = ax1.twinx()

# Second line (right y-axis)
sns.lineplot(data=df, x='Year', y='Job Loss Due to AI (%)', ax=ax2, color='red',ci=
ax2.set_ylabel('Job Loss Due to AI (%)', color='red')

# Titles and Legends
plt.title("Job Loss Due to AI (%) by AI Adoption Rate (%)")
fig.tight_layout()
plt.show()
```

<Figure size 1000x600 with 0 Axes>



```
In [13]: plt.figure(figsize=(10,6))
sns.violinplot(x='Top AI Tools Used',y='Market Share of AI Companies (%)',data=df)
plt.title("Top AI Tools Used by Market Share of AI Companies (%)")
```

Out[13]: Text(0.5, 1.0, 'Top AI Tools Used by Market Share of AI Companies (%)')

