



SYNTHETIC AI-POWERED JOB MARKET INSIGHTS

This document outlines essential SQL queries used to explore the "AI-Powered Job Market Insights" dataset. It focuses on analyzing job trends, salary patterns, and the influence of AI adoption on various industries, providing a foundation for deeper insights into the evolving job market.

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INDUSTRY AND JOB ANALYSIS



TO EXPLORE THE DISTRIBUTION OF
JOBS ACROSS VARIOUS INDUSTRIES,
ALONG WITH KEY STATISTICS.

INDUSTRY AND JOB ANALYSIS

Find the top 5 industries with the highest number of job listings.

QUERY:

```
SELECT Industry, COUNT(*) AS Job_Count
FROM jobmarket
GROUP BY Industry
ORDER BY Job_Count DESC
LIMIT 5;
```

RESULT:

Industry	Job_Count
Manufacturing	58
Education	57
Technology	56
Finance	53
Telecommunications	53

INDUSTRY AND JOB ANALYSIS

For each industry, find the job role with the highest salary.

QUERY:

```
SELECT Industry, Job_Title, Salary_USD
FROM jobmarket AS t1
WHERE Salary_USD = (
    SELECT MAX(Salary_USD)
    FROM jobmarket AS t2
    WHERE t1.Industry = t2.Industry
);
```

RESULT:

Industry	Job_Title	Salary_USD
Retail	Sales Manager	134823
Technology	Operations Manager	132529
Education	Data Scientist	129632
Healthcare	Data Scientist	148467
Manufacturing	Operations Manager	116713
Entertainment	Operations Manager	139078
Energy	UX Designer	140476
Telecommunications	Product Manager	133107
Transportation	Sales Manager	129307
Finance	Marketing Specialist	155210

INDUSTRY AND JOB ANALYSIS

For each industry, find the job role with the highest salary.

QUERY:

```
SELECT Industry, AVG(Salary_USD) AS Average_Salary
FROM jobmarket
WHERE Remote_Friendly = 'Yes'
GROUP BY Industry
ORDER BY Average_Salary DESC
LIMIT 5;
```

RESULT:

Industry	Average_Salary
Finance	99352.1852
Entertainment	97043.5357
Healthcare	94417.7083
Energy	92996.4074
Telecommunications	91967.1538

INDUSTRY AND JOB ANALYSIS

What is the relationship between AI adoption levels and average salary by industry?

QUERY:

```
SELECT
    Industry,
    AI_Adoption_Level,
    ROUND(AVG(Salary_USD), 2) AS Average_Salary
FROM
    jobmarket
GROUP BY Industry , AI_Adoption_Level
ORDER BY Industry , AI_Adoption_Level;
```

RESULT:

Industry	AI_Adoption_Level	Average_Salary
Education	High	93821.75
Education	Low	98748.43
Education	Medium	87453.17
Energy	High	83115.40
Energy	Low	92919.20
Energy	Medium	102879.93
Entertainment	High	96553.23
Entertainment	Low	95337.94
Entertainment	Medium	91514.82
Finance	High	88905.33
Finance	Low	92533.16
Finance	Medium	100480.68
Healthcare	High	90573.24
Healthcare	Low	92477.50
Healthcare	Medium	92426.60
Manufacturing	High	85148.35
Manufacturing	Low	92522.44
Manufacturing	Medium	83012.83
Retail	High	85843.79
Retail	Low	87703.77
Retail	Medium	97618.63
Technology	High	83673.77
Technology	Low	96567.69
Technology	Medium	91651.30
Telecommunications	High	88091.07
Telecommunications	Low	91591.41
Telecommunications	Medium	90986.88
Transportation	High	78326.33
Transportation	Low	90289.75
Transportation	Medium	84793.18

SALARY ANALYSIS



TO IDENTIFY KEY SKILLS THAT ARE
IN DEMAND AND CORRELATE WITH
JOB PROJECTIONS AND SALARIES.

SALARY ANALYSIS

Job growth projection wise find out the average salary and total number of jobs with salaries above \$100,000.

QUERY:

```
SELECT
    Job_Growth_Projection,
    COUNT(*) AS Job_Count,
    ROUND(AVG(Salary_USD), 2) AS Avg_Salary,
    MIN(Salary_USD) AS Min_Salary,
    MAX(Salary_USD) AS Max_Salary
FROM
    jobmarket
WHERE
    Salary_USD > 100000
    AND Job_Growth_Projection IN ('Growth' , 'Stable', 'Decline')
GROUP BY Job_Growth_Projection
ORDER BY Avg_Salary DESC;
```

RESULT:

Job_Growth_Projection	Job_Count	Avg_Salary	Min_Salary	Max_Salary
Growth	50	114471.98	100575	140476
Stable	58	112814.98	100930	148467
Decline	64	110668.28	100249	155210

SALARY ANALYSIS

What are the top 10 highest-paying jobs with salaries above \$100,000 and a 'Growth' or 'Stable' job projection?

QUERY:

```
SELECT
    Job_Title, Salary_USD, Job_Growth_Projection
FROM
    jobmarket
WHERE
    Salary_USD > 100000
    AND Job_Growth_Projection IN ('Growth' , 'Stable')
ORDER BY Salary_USD DESC
LIMIT 10;
```

RESULT:

Job_Title	Salary_USD	Job_Growth_Projection
Data Scientist	148467	Stable
UX Designer	140476	Growth
Software Engineer	138448	Growth
Cybersecurity Analyst	135567	Stable
Product Manager	133107	Growth
Operations Manager	132529	Growth
Data Scientist	130007	Stable
Operations Manager	129825	Growth
Data Scientist	129632	Growth
Sales Manager	129307	Stable

SALARY ANALYSIS

Which industries offer the highest average salaries for jobs with salaries above \$100,000 and a 'Growth' or 'Stable' projection?

QUERY:

```
SELECT
    Industry,
    ROUND(AVG(Salary_USD), 2) AS Avg_Salary,
    COUNT(*) AS Job_Count
FROM
    jobmarket
WHERE
    Salary_USD > 100000
    AND Job_Growth_Projection IN ('Growth' , 'Stable')
GROUP BY Industry
ORDER BY Avg_Salary DESC;
```

RESULT:

Industry	Avg_Salary	Job_Count
Energy	118095.36	11
Healthcare	116685.27	11
Finance	116359.25	16
Telecommunications	114502.58	12
Entertainment	112253.40	10
Education	112233.25	16
Transportation	112080.40	5
Retail	111039.22	9
Technology	110722.75	12
Manufacturing	106968.00	6

SALARY ANALYSIS

Compare the salary range between jobs that are remote-friendly vs. non-remote-friendly.

QUERY:

```
SELECT
  Remote_Friendly,
  ROUND(AVG(Salary_USD), 2) AS Avg_Salary,
  MIN(Salary_USD) AS Min_Salary,
  MAX(Salary_USD) AS Max_Salary
FROM
  jobmarket
GROUP BY Remote_Friendly;
```

RESULT:

Remote_Friendly	Avg_Salary	Min_Salary	Max_Salary
Yes	91694.15	31970	155210
No	90746.91	33601	135779

SALARY ANALYSIS

Identify which industries have the highest proportion of 'High' AI adoption level jobs that are also projected to decline.

QUERY:

```
SELECT
  Industry,
  100.0 * SUM(CASE
    WHEN
      AI_Adoption_Level = 'High'
      AND Job_Growth_Projection = 'Decline'
    THEN
      1
    ELSE 0
  END) / COUNT(*) AS High_Decline_Proportion
FROM
  jobmarket
GROUP BY Industry
ORDER BY High_Decline_Proportion DESC;
```

RESULT:

Industry	High_Decline_Proportion
Healthcare	16.66667
Manufacturing	15.51724
Retail	15.21739
Entertainment	14.89362
Technology	8.92857
Education	8.77193
Energy	8.16327
Transportation	7.69231
Finance	7.54717
Telecommunications	7.54717

LOCATION-BASED ANALYSIS



TO EXPLORE JOB OPPORTUNITIES
AND SALARY STATISTICS BY
GEOGRAPHIC LOCATION.

LOCATION-BASED ANALYSIS

Identify the top 3 locations that offer the highest average salary for jobs with 'Low' automation risk.

QUERY:

```
SELECT
    Location, ROUND(AVG(Salary_USD), 2) AS Average_Salary
FROM
    jobmarket
WHERE
    Automation_Risk = 'Low'
GROUP BY Location
ORDER BY Average_Salary DESC
LIMIT 5;
```

RESULT:

Location	Average_Salary
Paris	98909.31
Sydney	97372.75
San Francisco	95490.76
Toronto	93493.80
Berlin	91996.06

LOCATION-BASED ANALYSIS

Identify which industries have the highest proportion of 'High' AI adoption level jobs that are also projected to decline.

QUERY:

```
SELECT
    Location,
    COUNT(*) AS Job_Count,
    ROUND(AVG(Salary_USD), 2) AS Average_Salary
FROM
    jobmarket
WHERE
    Job_Title LIKE '%Data Scientist%'
GROUP BY Location
ORDER BY Job_Count DESC;
```

RESULT:

Location	Job_Count	Average_Salary
Sydney	8	96426.75
Tokyo	8	97886.25
New York	8	89680.38
Berlin	7	96716.14
Dubai	6	81342.67
San Francisco	6	87765.50
London	5	81659.20
Toronto	5	86515.40
Singapore	5	88972.40
Paris	4	105615.25

LOCATION-BASED ANALYSIS

What is the summary of AI adoption levels across different locations, and how does this relate to the job growth projection?

QUERY:

```
SELECT
  Location,
  AI_Adoption_Level,
  SUM(CASE
    WHEN Job_Growth_Projection = 'Growth' THEN 1
    ELSE 0
  END) AS Growth_Count,
  SUM(CASE
    WHEN Job_Growth_Projection = 'Stable' THEN 1
    ELSE 0
  END) AS Stable_Count,
  SUM(CASE
    WHEN Job_Growth_Projection = 'Decline' THEN 1
    ELSE 0
  END) AS Decline_Count
FROM
  jobmarket
GROUP BY Location , AI_Adoption_Level
ORDER BY Location , AI_Adoption_Level;
```

RESULT:

Location	AI_Adoption_Level	Growth_Count	Stable_Count	Decline_Count
Berlin	High	1	1	6
Berlin	Low	9	9	5
Berlin	Medium	8	3	6
Dubai	High	3	4	9
Dubai	Low	3	5	3
Dubai	Medium	8	7	9
London	High	2	6	6
London	Low	5	6	2
London	Medium	6	9	4
New York	High	7	9	3
New York	Low	6	3	5
New York	Medium	6	6	4
Paris	High	3	4	4
Paris	Low	4	7	11
Paris	Medium	2	6	5
San Francisco	High	8	6	9
San Francisco	Low	6	4	6
San Francisco	Medium	7	9	7
Singapore	High	3	6	7
Singapore	Low	6	6	6
Singapore	Medium	10	4	6
Sydney	High	7	4	4
Sydney	Low	8	9	4
Sydney	Medium	4	3	9
Tokyo	High	8	0	5
Tokyo	Low	7	10	5
Tokyo	Medium	7	3	6
Toronto	High	4	6	2
Toronto	Low	7	2	5
Toronto	Medium	4	5	6

LOCATION-BASED ANALYSIS

What is the distribution of AI adoption levels across locations, and what is the average salary for jobs with 'Growth' and 'Stable' projections?

QUERY:

```
SELECT
    Location,
    AVG(Salary_USD) AS Avg_Salary,
    COUNT(*) AS Job_Count
FROM
    jobmarket
WHERE
    Job_Growth_Projection IN ('Growth' , 'Stable')
GROUP BY Location
ORDER BY Avg_Salary DESC;
```

RESULT:

Location	Avg_Salary	Job_Count
Tokyo	95235.0286	35
Singapore	94578.2286	35
Berlin	93463.3226	31
New York	93140.2973	37
Sydney	90383.4286	35
Dubai	89895.8000	30
Paris	89238.4231	26
Toronto	87967.5357	28
London	87078.8235	34
San Francisco	87076.5750	40

SKILLS ANALYSIS



TO IDENTIFY KEY SKILLS THAT ARE IN DEMAND AND CORRELATE WITH JOB PROJECTIONS AND SALARIES.

SKILLS ANALYSIS

Find the Top 5 skills required across all job listings.

QUERY:

```
SELECT
    Required_Skills, COUNT(*) AS Skill_Count
FROM
    jobmarket
GROUP BY Required_Skills
ORDER BY Skill_Count DESC
LIMIT 5;
```

RESULT:

Required_Skills	Skill_Count
Project Management	60
Python	60
Cybersecurity	58
Machine Learning	52
UX/UI Design	49

SKILLS ANALYSIS

Which skills are most associated with jobs that have a 'Growth' projection over the next 5 years?

QUERY:

```
SELECT
    Required_Skills, COUNT(*) AS Skill_Count
FROM
    jobmarket
WHERE
    Job_Growth_Projection = 'Growth'
GROUP BY Required_Skills
ORDER BY Skill_Count DESC;
```

RESULT:

Required_Skills	Skill_Count
Machine Learning	24
UX/UI Design	21
Project Management	21
Cybersecurity	20
Python	18
Sales	16
Data Analysis	16
JavaScript	14
Marketing	11
Communication	8

SKILLS ANALYSIS

Which skills are most frequently required for jobs offering salaries above \$100,000?

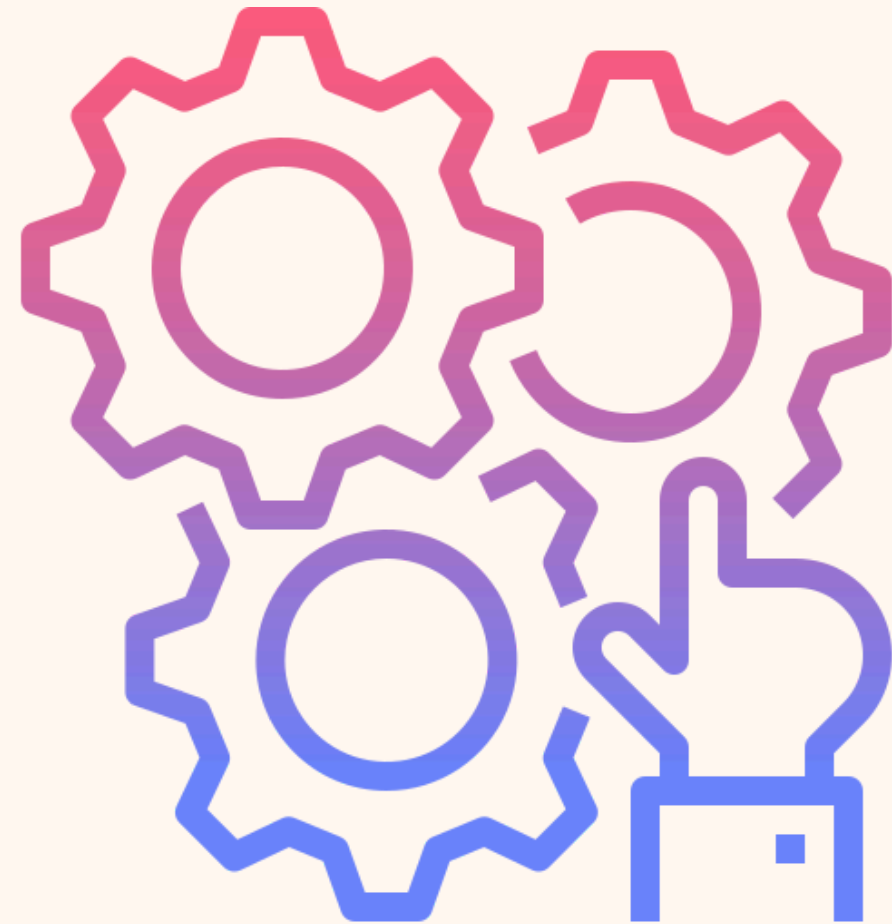
QUERY:

```
SELECT
    Required_Skills, COUNT(*) AS Skill_Count
FROM
    jobmarket
WHERE
    Salary_USD > 100000
GROUP BY Required_Skills
ORDER BY Skill_Count DESC;
```

RESULT:

Required_Skills	Skill_Count
Python	25
JavaScript	23
Sales	21
Machine Learning	20
Data Analysis	18
Project Management	17
Cybersecurity	16
UX/UI Design	15
Marketing	10
Communication	7

AUTOMATION AND GROWTH PROJECTIONS



TO ANALYZE THE IMPACT OF
AUTOMATION RISKS AND GROWTH
PROJECTIONS ON JOB AVAILABILITY.

AUTOMATION AND GROWTH PROJECTIONS ANALYSIS

Which industries have the highest number of jobs with a 'High' automation risk?

QUERY:

```
SELECT
    Industry, COUNT(*) AS Job_Count
FROM
    jobmarket
WHERE
    Automation_Risk = 'High'
GROUP BY Industry
ORDER BY Job_Count DESC;
```

RESULT:

Industry	Job_Count
Education	22
Manufacturing	19
Transportation	19
Entertainment	18
Telecommunications	18
Technology	17
Finance	17
Energy	17
Retail	11
Healthcare	11

AUTOMATION AND GROWTH PROJECTIONS ANALYSIS

What is the average salary for jobs with a 'High' automation risk across different locations?

QUERY:

```
SELECT
    Location,
    Automation_Risk,
    ROUND(AVG(Salary_USD), 2) AS Avg_Salary,
    COUNT(*) AS Job_Count
FROM
    jobmarket
WHERE
    Automation_Risk = 'High'
GROUP BY Location
ORDER BY Avg_Salary DESC;
```

RESULT:

Location	Automation_Risk	Avg_Salary	Job_Count
Singapore	High	100455.70	23
New York	High	99201.47	17
Tokyo	High	98103.20	15
Berlin	High	97395.50	12
Dubai	High	92453.43	14
San Francisco	High	92101.25	24
Toronto	High	90586.93	15
Sydney	High	90412.88	17
London	High	88640.85	20
Paris	High	88313.42	12

AUTOMATION AND GROWTH PROJECTIONS ANALYSIS

Which job titles are most at risk of automation, and what are their average salaries?

QUERY:

```
SELECT
    Job_Title,
    Automation_Risk,
    ROUND(AVG(Salary_USD), 2) AS Avg_Salary,
    COUNT(*) AS Job_Count
FROM
    jobmarket
WHERE
    Automation_Risk = 'High'
GROUP BY Job_Title
ORDER BY Job_Count DESC;
```

RESULT:

Job_Title	Automation_Risk	Avg_Salary	Job_Count
Cybersecurity Analyst	High	95007.87	23
AI Researcher	High	95623.45	20
Sales Manager	High	94755.55	20
Marketing Specialist	High	106155.53	17
Data Scientist	High	92571.76	17
Product Manager	High	92100.13	16
UX Designer	High	93186.81	16
HR Manager	High	83102.47	15
Software Engineer	High	83709.80	15
Operations Manager	High	103247.90	10

AUTOMATION AND GROWTH PROJECTIONS ANALYSIS

Find the percentage of jobs in the dataset that have a 'Growth' job projection by company size.

QUERY:

```
SELECT
  Company_Size,
  100.0 * SUM(CASE
    WHEN Job_Growth_Projection = 'Growth' THEN 1
    ELSE 0
  END) / COUNT(*) AS Growth_Percentage
FROM
  jobmarket
GROUP BY Company_Size;
```

RESULT:

Company_Size	Growth_Percentage
Small	36.84211
Large	35.54217
Medium	28.83436

AUTOMATION AND GROWTH PROJECTIONS ANALYSIS

How many jobs at different company sizes and AI adoption levels are at high, medium, and low risk of automation?

QUERY:

```
SELECT
  Company_Size,
  AI_Adoption_Level,
  SUM(CASE
    WHEN Automation_Risk = 'High' THEN 1
    ELSE 0
  END) AS High_Risk_Count,
  SUM(CASE
    WHEN Automation_Risk = 'Medium' THEN 1
    ELSE 0
  END) AS Medium_Risk_Count,
  SUM(CASE
    WHEN Automation_Risk = 'Low' THEN 1
    ELSE 0
  END) AS Low_Risk_Count
FROM
  jobmarket
GROUP BY Company_Size , AI_Adoption_Level
ORDER BY Company_Size , AI_Adoption_Level;
```

RESULT:

Company_Size	AI_Adoption_Level	High_Risk_Count	Medium_Risk_Count	Low_Risk_Count
Large	High	15	20	12
Large	Low	16	25	13
Large	Medium	27	21	17
Medium	High	11	17	14
Medium	Low	19	11	31
Medium	Medium	22	20	18
Small	High	22	19	17
Small	Low	18	24	17
Small	Medium	19	16	19

CONCLUSION

This documentation offers a comprehensive set of SQL queries designed to analyze trends in the AI-driven job market, emphasizing automation risk, AI adoption, salary distributions, and industry-specific insights. These queries serve as a powerful tool for understanding AI's impact on different sectors, helping researchers and analysts identify patterns that align with broader job market trends.

THANK YOU

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