



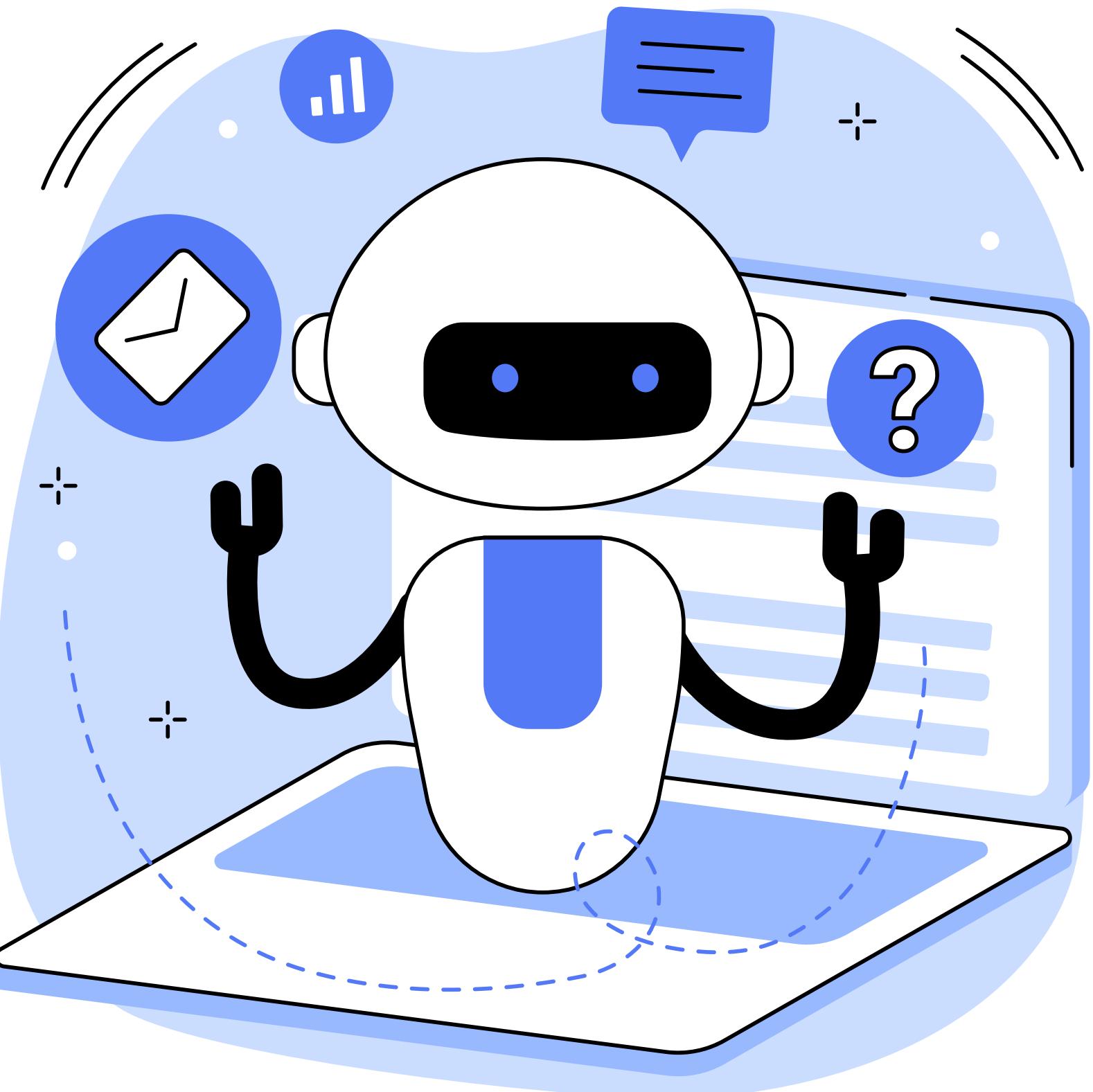
# Global AI Job Market and Salary Trends Analysis Using SQL

# Project Overview

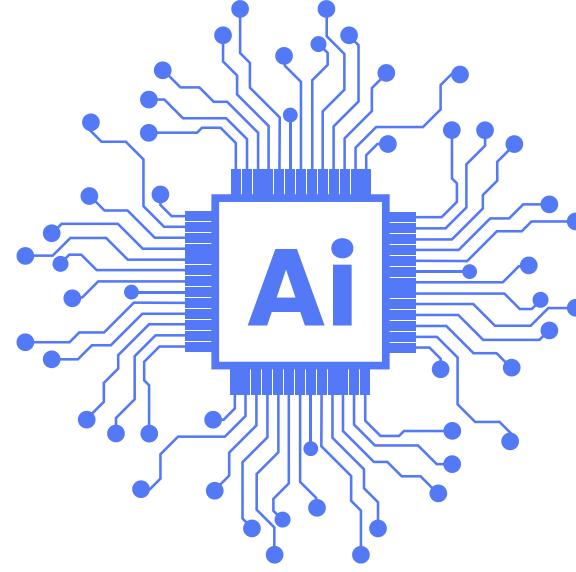
This project explores **global trends in AI jobs** using **SQL-based analysis** on a rich dataset of job postings.

It focuses on **uncovering patterns in salaries, in-demand skills, job roles, and regional opportunities**. By **analyzing key factors** like experience level, education, and remote work, the goal is to provide clear, **data-driven insights** into the evolving AI job market.

The **findings aim to support** professionals, recruiters, and **decision-makers** in understanding and **navigating the AI talent landscape**.



# Our Key Analytical Areas



## Job Role & Demand Analysis

Understanding what roles are most in demand and how they're distributed globally.

## Geographic & Remote Work Trends

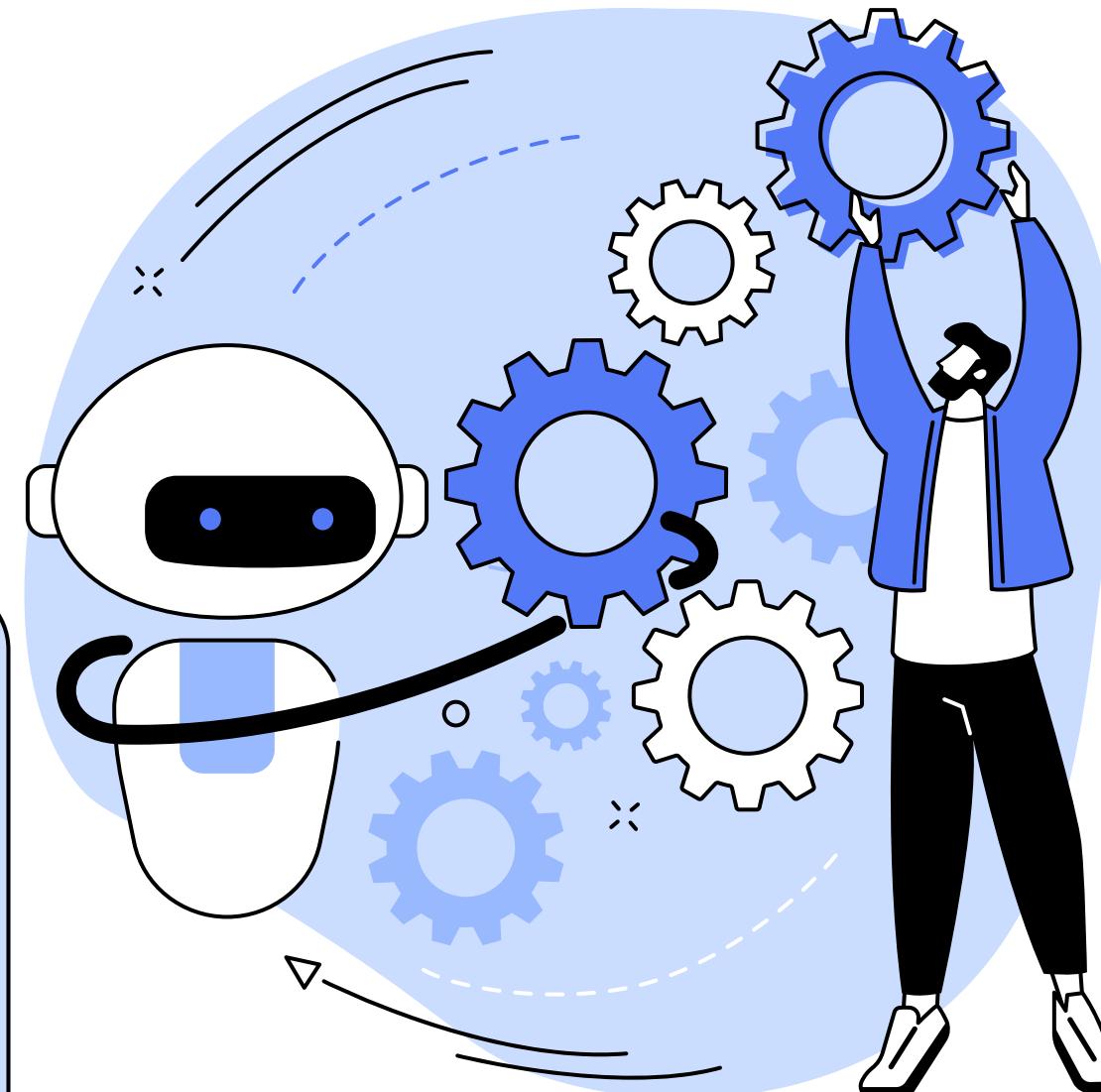
Examining how location and remote work influence salary and job structure.

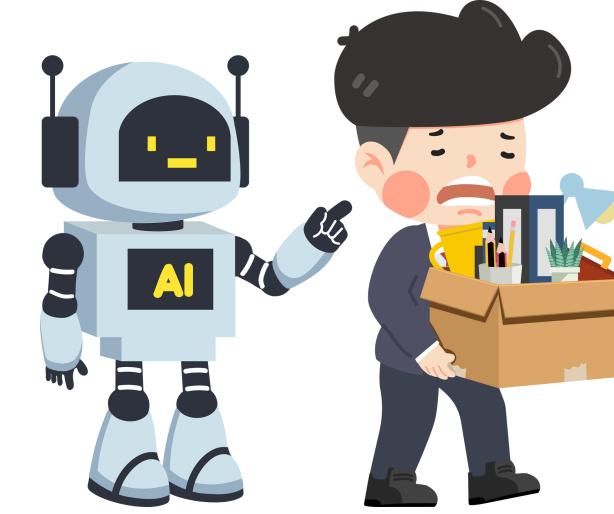
## Skills & Qualifications Insights

Analyzing the technical skills and qualifications that employers prioritize.

## Salary & Experience Dynamics

Exploring how compensation varies with experience level, education, and job type.





# Job Role & Demand Analysis

Identifying globally in-demand job titles and comparing their average salaries by location.

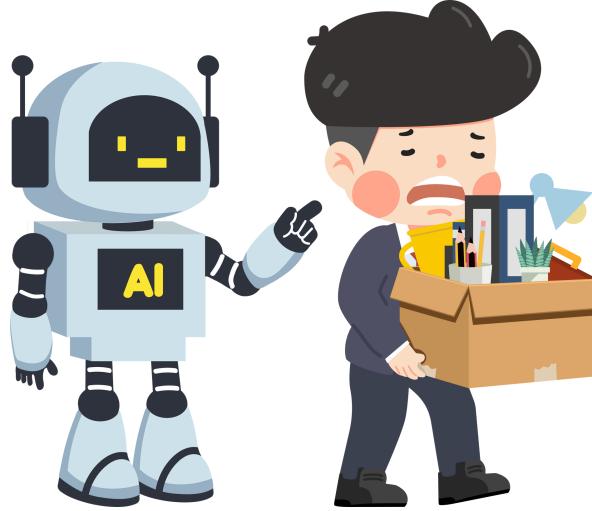
## Query

```
SELECT  
    job_title,  
    company_location,  
    COUNT(*) AS Total_Jobs,  
    ROUND(AVG(salary_usd), 2) AS Average_Salary  
FROM Project  
GROUP BY 1,2  
ORDER BY 3 DESC;
```

## Output

	job_title	company_location	Total_Jobs	Average_Salary
▶	AI Product Manager	United Kingdom	58	120785.74
	Head of AI	Germany	58	118442.26
	Machine Learning Researcher	Japan	58	77980.33
	Autonomous Systems Engineer	China	57	85888.00
	AI Research Scientist	Denmark	57	161713.93
	Head of AI	Ireland	54	82246.31
	Research Scientist	Denmark	53	157288.47
	Data Scientist	Austria	52	81075.42
	Machine Learning Researcher	Norway	51	151495.43
	AI Product Manager	Singapore	51	114794.45





# Job Role & Demand Analysis

Identify the AI job titles that offer the highest average salaries globally, helping to highlight top-tier roles in terms of compensation.

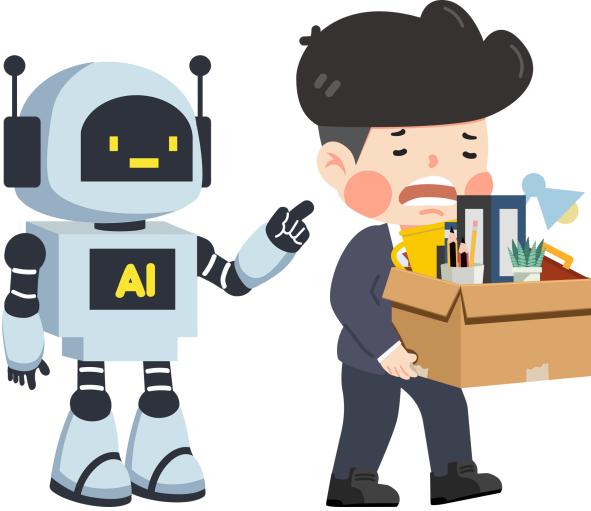
## Query

```
WITH Salary_Ranking AS (
  SELECT
    job_title,
    ROUND(COALESCE(AVG(salary_usd), 0), 2) AS Average_Salary,
    DENSE_RANK() OVER (
      ORDER BY ROUND(COALESCE(AVG(salary_usd), 0), 2) DESC
    ) AS Salary_Rank
  FROM Project
  GROUP BY job_title
)
SELECT * FROM Salary_Ranking
WHERE Salary_Rank <= 5;
```

## Output

job_title	Average_Salary	Salary_Rank
AI Specialist	120570.76	1
Machine Learning Engineer	118827.92	2
Head of AI	118542.97	3
AI Research Scientist	117897.93	4
AI Architect	117436.51	5

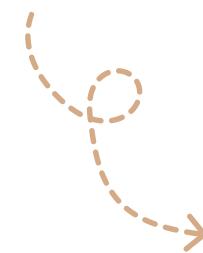




# Job Role & Demand Analysis

Track monthly trends in the number of job postings and analyze how average salaries fluctuate over time.

## Query



## SELECT

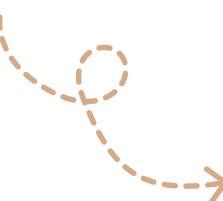
```
DATE_FORMAT(posting_date, '%Y-%m') AS posting_month,  
COUNT(*) AS Total_Postings,  
round(coalesce(avg(salary_usd),0),2) as Average_Salary
```

FROM Project

GROUP BY posting\_month

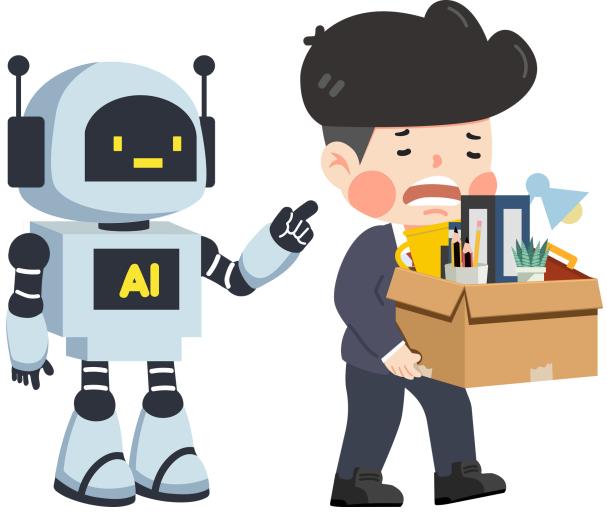
order by 1;

## Output



	posting_month	Total_Postings	Average_Salary
▶	2024-01	953	116866.07
	2024-02	927	112127.93
	2024-03	932	114699.63
	2024-04	985	115990.82
	2024-05	955	116035.85
	2024-06	938	112052.49
	2024-07	959	118575.11
	2024-08	958	114057.74
	2024-09	895	116534.84
	2024-10	949	114021.60
	2024-11	922	113900.84
	2024-12	959	116723.81
	2025-01	964	115995.05





# Job Role & Demand Analysis

## Key Insights

### High Demand Roles:

Adopt AI tools that can help students with their language learning: translation software, speech recognition software, or writing tools.

### Top-Paying Positions:

Roles like Head of AI, AI Product Manager, and Deep Learning Engineer offer the highest average salaries.

### Geographic Salary Gaps:

The same job titles yield significantly higher salaries in countries like the US, Switzerland, and Singapore.

### Specialized = Scarce:

High-paying roles are often niche, with fewer postings despite premium compensation.



# Geographic & Remote Work Insights

Examine how remote work influences salaries across experience levels and job titles.

## Query

```
SELECT
    job_title,
    years_experience AS Experience_Level,
    experience_level,
    ROUND(COALESCE(AVG(salary_usd), 0), 2) AS Average_Salary,
    ROUND(COALESCE(AVG(remote_ratio), 0), 2) AS Average_Remote_Ratio,
    COUNT(*) AS Total_Postings
FROM
    project
GROUP BY 1 , 2 , 3
ORDER BY 2 DESC , 4 DESC;
```

## Output

job_title	Experience_Level	experience_level	Average_Salary	Average_Remote_Ratio	Total_Postings
Head of AI	19	EX	210462.65	44.12	17
Machine Learning Engineer	19	EX	210042.00	56.67	15
AI Specialist	19	EX	209697.35	45.65	23
Computer Vision Engineer	19	EX	205227.56	47.22	18
Robotics Engineer	19	EX	196355.38	39.66	29
Machine Learning Researcher	19	EX	195678.78	52.78	18
Data Engineer	19	EX	194955.45	59.09	11
Principal Data Scientist	19	EX	194185.54	69.23	13
AI Consultant	19	EX	194056.81	62.50	16

Note: EN = Entry, MI = Mid, SE = Senior, EX = Executive





# Geographic & Remote Work Insights

Compare average salaries and remote work flexibility across different countries.

## Query

**SELECT**

```
company_location AS Country,  
ROUND(COALESCE(AVG(salary_usd), 0), 2) AS Average_Salary,  
ROUND(COALESCE(AVG(remote_ratio), 0), 2) AS Average_Remote_Ratio
```

**FROM**

```
project
```

**GROUP BY 1**

**ORDER BY 2 DESC;**

## Output

Country	Average_Salary	Average_Remote_Ratio
Switzerland	170639.09	49.20
Denmark	165652.25	50.19
Norway	159490.53	49.10
United States	146833.05	48.90
United Kingdom	128720.19	46.84
Singapore	128004.04	49.35
Netherlands	126750.45	48.43
Sweden	123559.75	51.13
Germany	121010.14	47.85





# Geographic & Remote Work Insights

## Key Insights

### Top-Paying Countries:

The United States, Switzerland, Denmark and Norway consistently offer the highest average salaries for AI roles.

### Remote Work Leaders:

Countries like Ireland, Sweden, and India show the highest average remote ratios, indicating strong remote job support.

### Salary vs. Remote Flexibility:

Higher remote flexibility often aligns with mid- to senior-level roles, especially in countries with strong tech ecosystems.

### Regional Disparity:

Identical roles can differ by \$50K+ in average salary depending on country, stating importance of geography in AI compensation.



# Salary & Experience Dynamics

Analyze how average salaries vary by both experience level and industry.

## Query

```
SELECT  
    experience_level,  
    industry,  
    ROUND(coalesce(AVG(salary_usd),0), 2) AS Average_Salary  
  
FROM Project  
GROUP BY experience_level, industry  
ORDER BY 1,3 DESC;
```

## Output

experience_level	industry	Average_Salary
EN	Education	64692.25
EN	Government	64329.10
EN	Manufacturing	64221.67
EN	Automotive	63848.88
EN	Healthcare	63812.31
EN	Real Estate	63697.91
EN	Telecommunications	63660.89
EN	Transportation	63461.84
EN	Consulting	63265.74





# Salary & Experience Dynamics

## Key Insights

### Clear Upward Trend:

Salaries increase consistently with experience level — Executive and Senior roles earn up to 3x more than Entry-level positions.

### Top Industries for Seniors:

Finance, Government, and Education industries offer the highest average salaries for experienced professionals.

### Entry-Level Edge:

Even Entry-level roles in Consulting and Healthcare offer above-average salaries, making them strong starting points.

### Experience Matters More Than Education:

Candidates with more years of experience consistently earn higher salaries, regardless of education level.



# Skills and Qualifications Insights

Average salary by experience level and how does it differ across industries?

## Query

```
SELECT  
    experience_level,  
    industry,  
    ROUND(COALESCE(AVG(salary_usd), 0), 2) AS Average_Salary  
FROM  
    project  
GROUP BY 1 , 2  
ORDER BY 3 DESC;
```

## Output

experience_level	industry	Average_Salary
EX	Real Estate	194890.77
EX	Retail	193466.97
EX	Consulting	191933.86
EX	Gaming	189925.44
EX	Media	189360.47
EX	Technology	189174.86
EX	Automotive	189066.12
EX	Government	188877.31
EX	Manufacturing	188377.70





# Skills and Qualifications Insights

How does the required education level (Bachelor, Master, PhD) affect average salary and job description length?

## Query

```
WITH GlobalAvg AS (
    SELECT
        AVG(salary_usd) AS global_salary,
        AVG(job_description_length) AS global_desc
    FROM Project
)

SELECT
    education_required,
    ROUND(AVG(salary_usd), 2) AS avg_salary,
    ROUND(AVG(job_description_length), 2) AS avg_desc_length,
    ROUND(AVG(salary_usd) - (SELECT global_salary FROM GlobalAvg), 2) AS salary_diff,
    ROUND(AVG(job_description_length) - (SELECT global_desc FROM GlobalAvg), 2) AS desc_diff
FROM Project
GROUP BY education_required
ORDER BY avg_salary DESC;
```

## Output

	education_required	avg_salary	avg_desc_length	salary_diff	desc_diff
▶	Master	117171.82	1499.10	1822.85	-4.22
	Bachelor	115861.63	1497.25	512.66	-6.06
	Associate	114605.71	1507.69	-743.26	4.37
	PhD	113728.17	1509.36	-1620.80	6.05



# Skills and Qualifications Insights

## Key Insights

### Education Premium Exists:

Jobs requiring a Master's or PhD tend to offer significantly higher salaries and longer job descriptions, indicating more complex responsibilities.

### Higher Degrees, Higher Pay:

Roles requiring a PhD offer the highest average salaries, followed by Master's and then Bachelor's degrees.

### Bachelor's Still in Demand:

Many roles still accept Bachelor's degrees, but with comparatively lower compensation and shorter descriptions.

### Master's as the Sweet Spot:

Teachers need to have their fingers on the pulse and identify new tools and resources that can benefit their students.



**THANK YOU FOR  
VALUABLE TIME!**

**PRESENTED BY: ADNAN HAFEEZ**