Analyzing AI/ML/Data Science Salaries (2020 – 2025)

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Agenda

Introduction

Why Analyze AI/ML/Data Science Salaries?

- Artificial Intelligence, Machine Learning, and Data Science are **transforming industries** with modern innovations ranging from healthcare, finance, autonomous systems and beyond.

- Companies with open positions are **competing for talent** with these specialize skills.

- In a **competitive market**, compensation is critical for employers, job seekers, new and old professionals.

- Post-pandemic salary have evolved with new **trends impacting salary.**

Data Overview
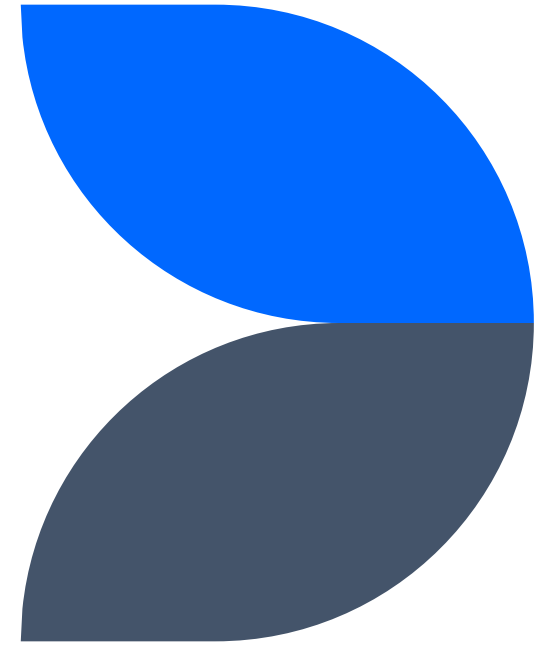
Dataset

- The dataset contains details of AI, ML, and Data Science salaries **(2020 - 2025).**

- The data is **updated weekly** and <u>might change over time during the years.</u>

- It contains **88584** observations/rows and **11** attributes/columns.

- Different **key features** impacting salaries.

Key Features:

- Work Year
- Experience Level
- Remote Ratio
- Job Title
- Location
- Company Size

Dataset Cont.

Attributes	Values	Description
work_year	2020 - 2025	The Year The Salary Was Paid
experience_level	EN, MI, SE, EX	Entry, Mid, Senior, Executive
employment_type	FT, PT, CT, FL	Full/Part-time, Contract, Freelance
job_tittle	Engineer, Data Science, etc.	Role Worked During The Year
employee_residency	Country	Primary Country of Residence
company_location	Country	Employer's Main Office Location
company _size	S, M, L	Size Of The Company Per Employee
remote_ratio	0, 50, 100	Onsite, Hybrid, Remote
salary_in_usd	-------------	Salary in USD Currency
salary_currency	-------------	Currency of The Salary Paid
salary	-------------	Gross salary amount paid

Methodology

Data Exploration

Import data from source and explore the structure, null values, inconsistencies, unique entries, remove possible duplicates, new attributes and clean data.
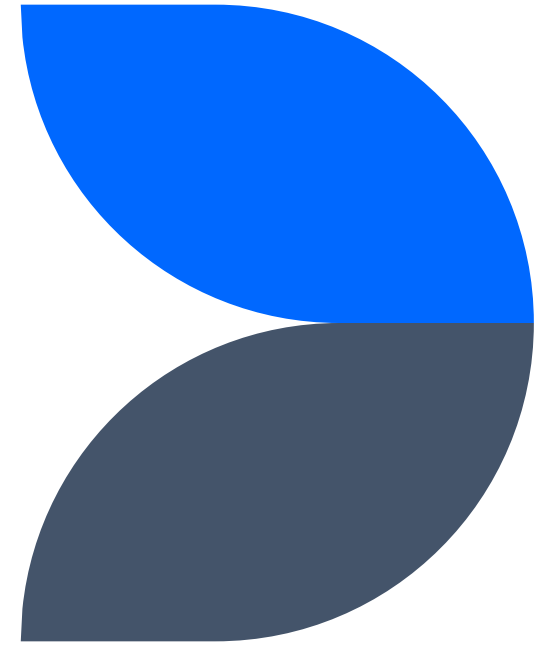
Filter/Group/Analyze

Filter data for most relevant information. Grouping and analyzing by critical key features for possible patterns and trends.

Visualize/Predict

Visualization tools with R to enhance results insights and employ regression models and interactions.

Source: Kaggle

Results & Figures

Median Salary Growth by Experience Level (2020-2025)

- **2021** had the **lowest pay** across all experience levels.

- **2024** had the **highest pay.**

- **Salaries increased** by ~$34,000 per experience level.

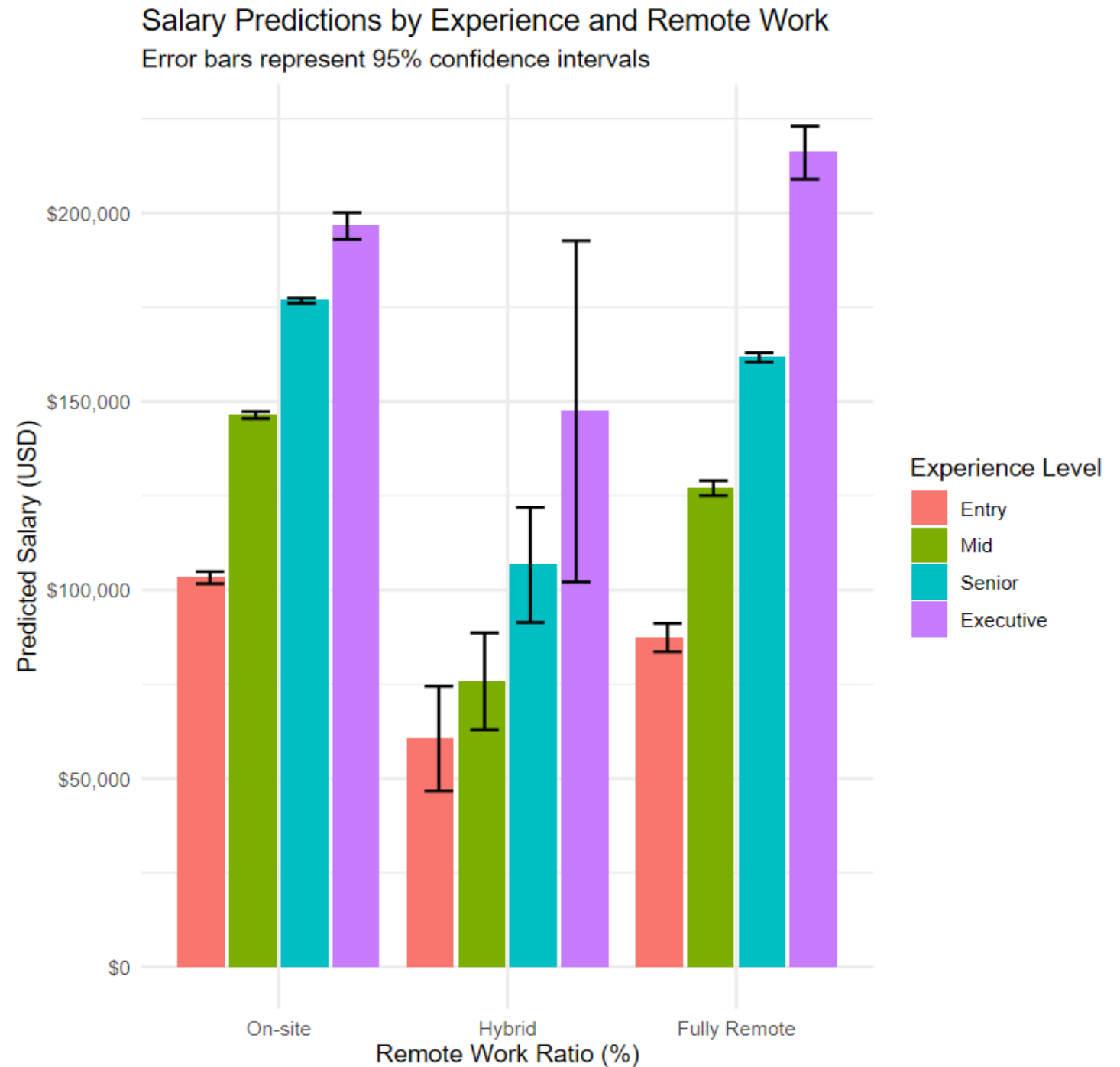- **2025** data is incomplete (year still in progress)

Distribution of Remote Work Arrangements (2020 - 2025)

- Distribution indicates a **higher number** of On-site jobs in total

- The type of work **can influence fluence** salary levels.

21.1%

0.3%

78.5%

Work Type

On-site
Hybrid
Fully Remote
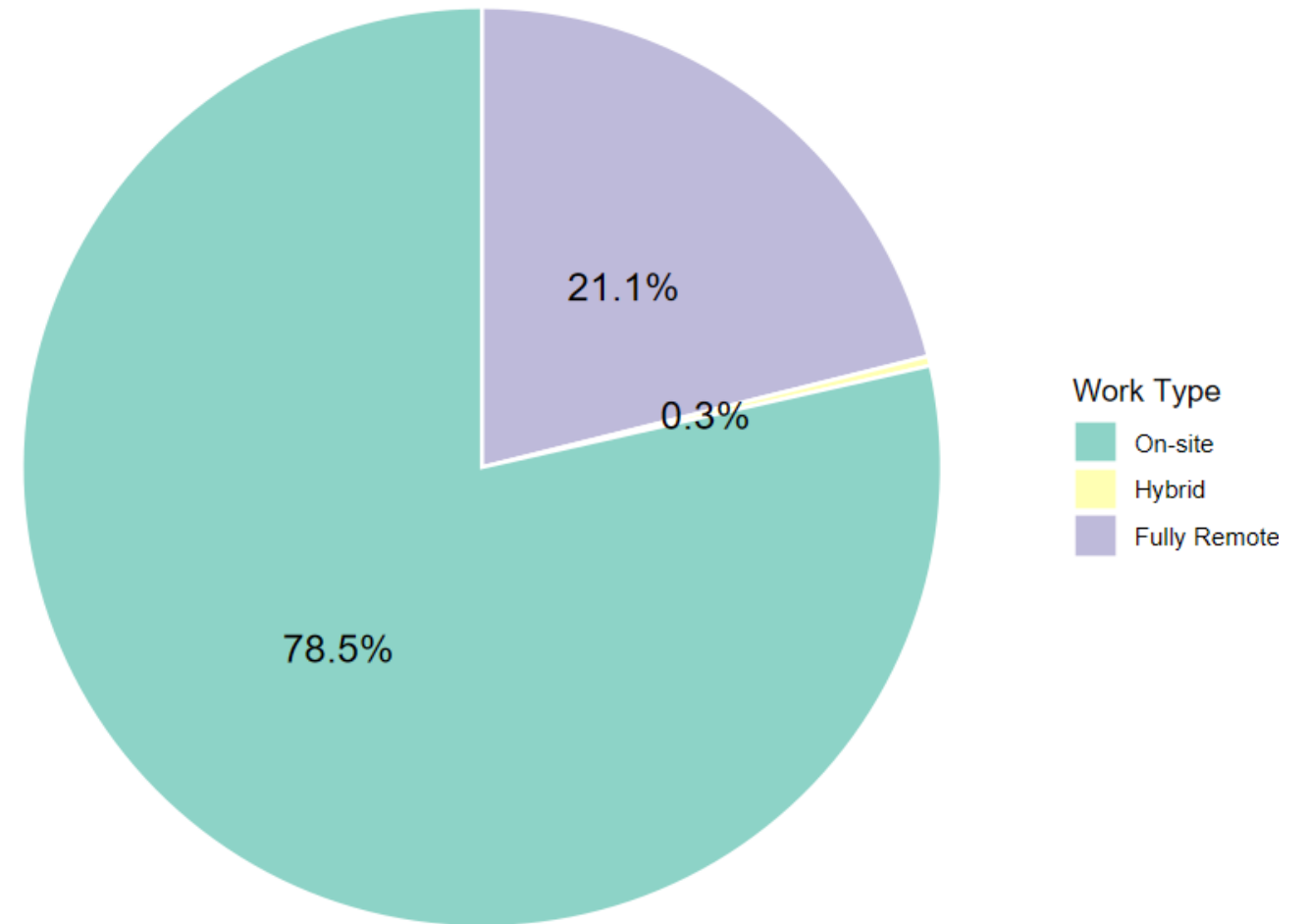
- **Remote roles pay less** for Entry to Senior positions

- **Hybrid work leads to lower** salaries for Mid and Senior levels.

- **Executives earn more** in fully remote jobs

- **Hybrid positions have the lowest pay overall.**

Salary Predictions by Experience and Remote Work
Error bars represent 95% confidence intervals

Conclusion

To Conclude

Salary Trends

- 2021 had the lowest pay; 2024 the highest with salaries rising ~$34K per experience level

- 2025 data is partially incomplete, but it can be use as a guide for current trends.

Work Arrangement Impact

- Remote pay less for entry Entry to Senior roles.

- Hybrid has the lowest pay overall for all roles.
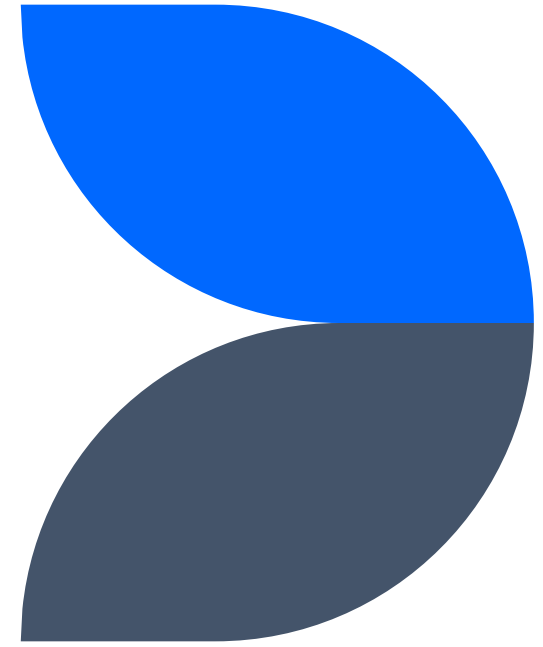
Job Distribution

- On-site jobs are more common, despite remote/hybrid growth.

What's Next?

- Analyze the effect of **company size** and **job titles** on salary ranges.

- Compare the median **salary distribution by**:
  - Company location
  - Employee residency (where employees live)

- Evaluate across **employment types**:
  - Full-time
  - Part-time
  - Freelance
  - Contractor

Any Questions?

Thank you

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