

The background is a gradient of dark blue and purple, speckled with small white dots resembling stars. Overlaid on this are several faint, white, circular and semi-circular lines, some with arrows indicating a clockwise direction. A large circular scale with numerical markings from 140 to 260 is visible on the left side.

DATA SCIENCE SALARIES – MANAGING EXPECTATIONS

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PROJECT OVERVIEW

- Analyzed Data Science salaries from 2020 to 2023
- Source: <https://www.kaggle.com/datasets/iamsouravbanerjee/data-science-salaries-2023>
- File format: CSV file
- File description: 3,300 rows of data with 11 columns

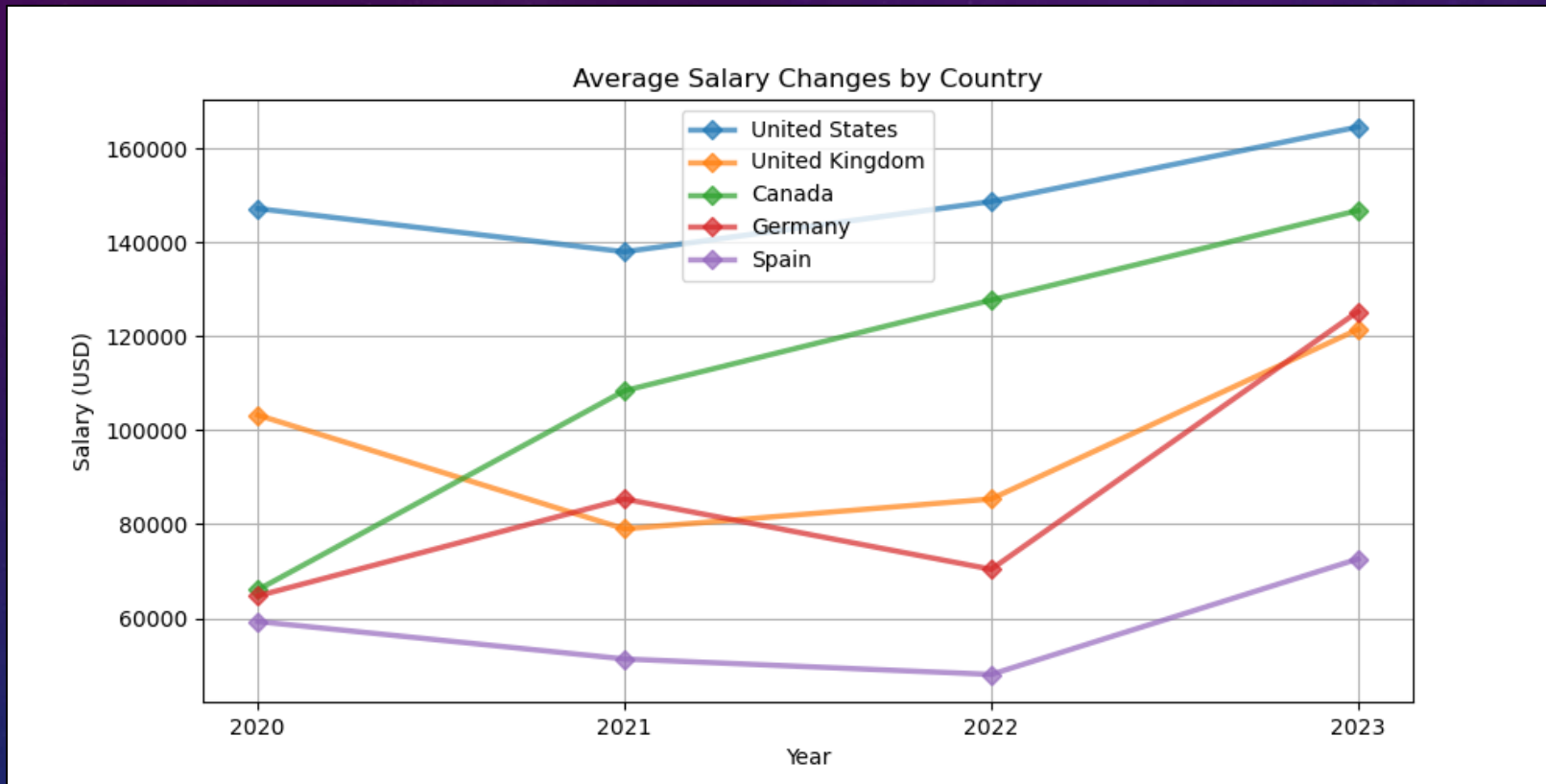
Structure of the Dataset

Job Title	Employment Type	Experience Level	Expertise Level	Salary	Salary Currency	Company Location	Salary in USD	Employee Residence	Company Size	Year
Data Scientist	Full-Time	Entry	Junior	120000	Australian Dollar	Australia	83171	Australia	Medium	2022
Computer Vision Engineer	Full-Time	Senior	Expert	102000	Brazilian Real	Brazil	18907	Brazil	Medium	2021
Data Scientist	Full-Time	Mid	Intermediate	50000	British Pound Sterling	United Kingdom	61520	United Kingdom	Medium	2023
Data Analyst	Full-Time	Entry	Junior	40000	British Pound Sterling	United Kingdom	49216	United Kingdom	Medium	2023

RESEARCH QUESTIONS

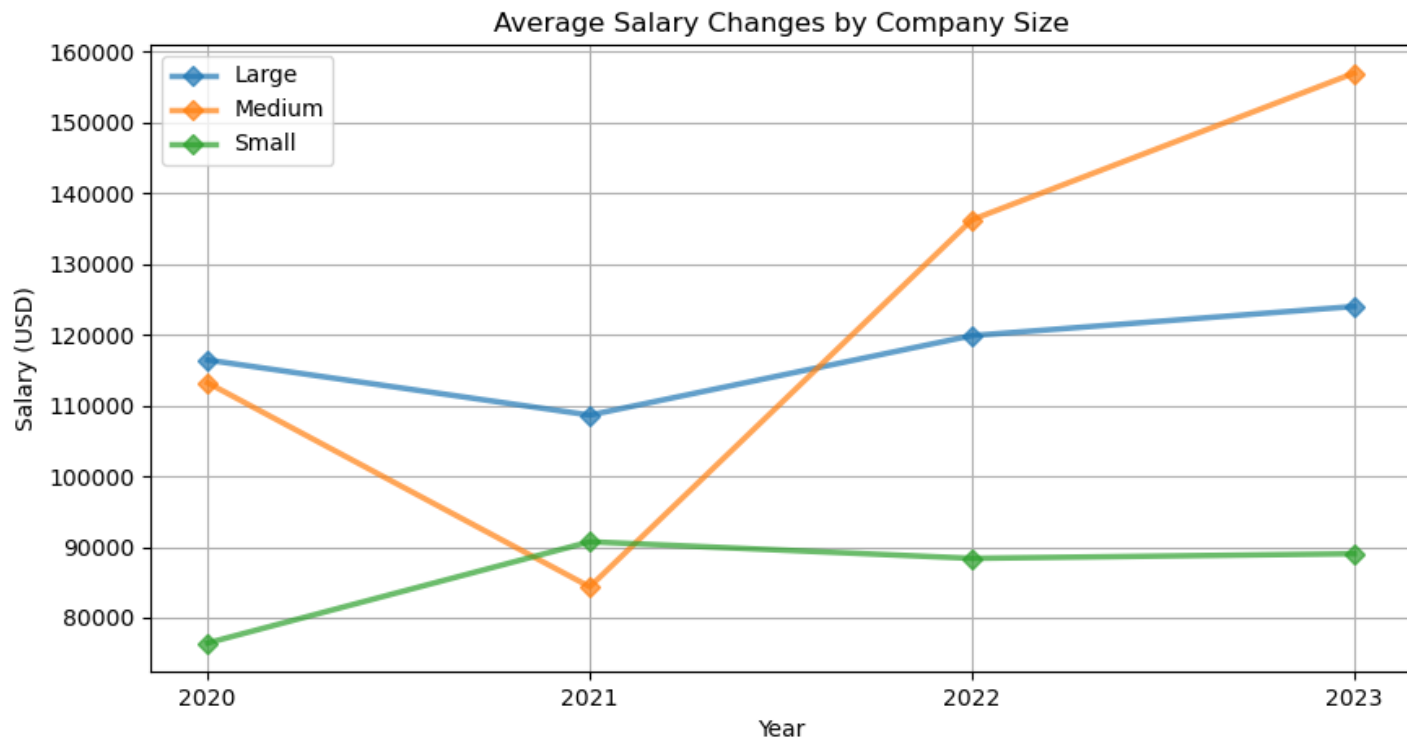
1. How have data science salaries changed over time? (by country and company size)
2. What is the breakdown of experience level required for data science jobs, and how do they vary?
3. What is the breakdown of job titles for data science jobs, and how do they vary?
4. Do US companies hire US residents, and do US residents work for US companies?

HOW HAVE DATA SCIENCE SALARIES CHANGED OVER TIME? – BY COUNTRY (COMPANY LOCATION)



- There are 71 total countries included in the dataset
- 89.8% of data science jobs are represented by the top 5 countries
- The US alone claims 75.6% of the data science jobs in the dataset

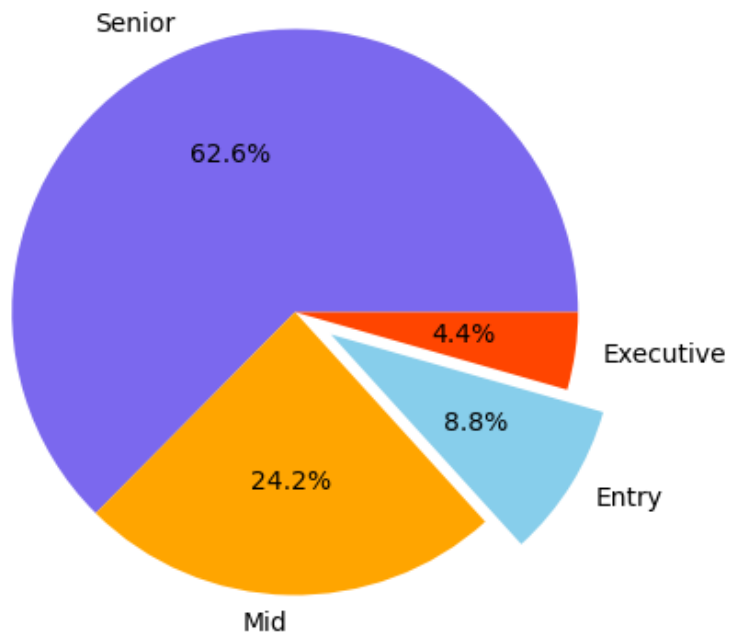
HOW HAVE DATA SCIENCE SALARIES CHANGED OVER TIME? – BY COMPANY SIZE



- The data is categorized into 3 different company sizes:
 - Small: 151 companies
 - Medium: 2707 companies
 - Large: 442 companies
- Medium-sized companies showed the greatest increase, moving from lowest average salary in 2021 to highest in 2022 and 2023

WHAT IS THE BREAKDOWN OF EXPERIENCE LEVEL REQUIRED FOR DATA SCIENCE JOBS?

Data Science Jobs by Experience Required



- Senior-level positions comprised the majority of jobs with 62.6% and an average salary of \$160,000 USD
- Entry-level positions (this is us) only comprised 8.8% of jobs, with an average salary of \$80,000 USD
- As experience level increases, the variation (standard deviation) in salary also increases

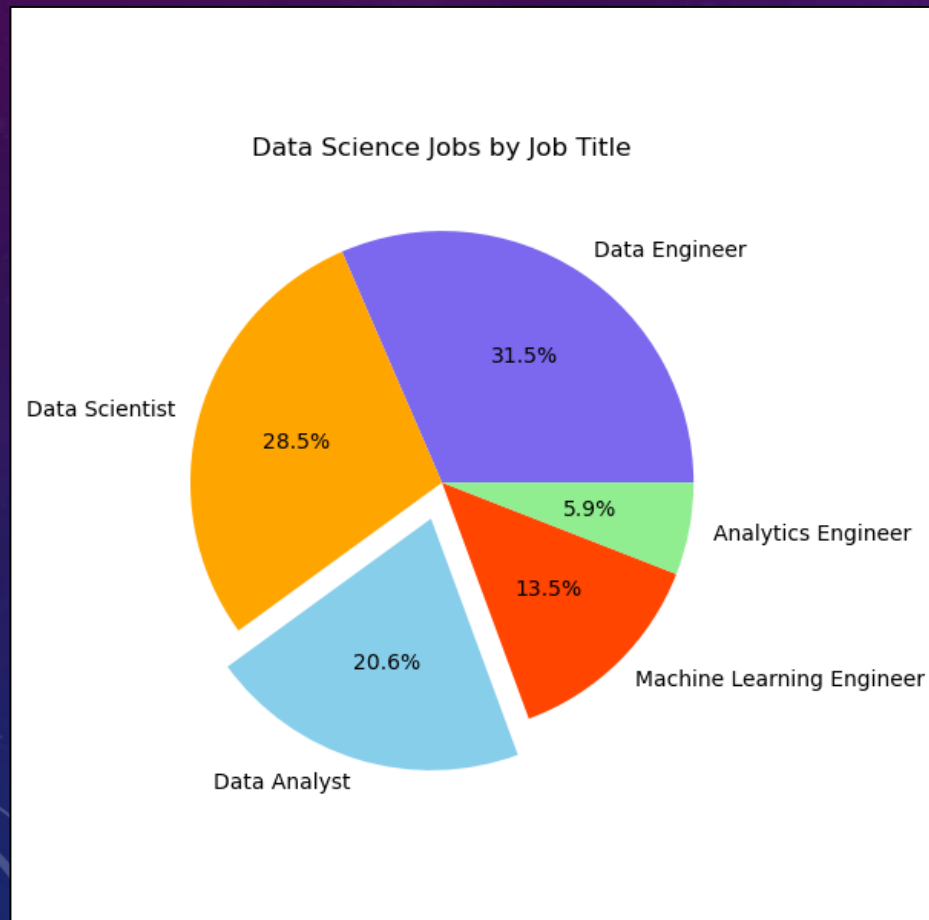
	Mean	Median	Variance	Std. Deviation	SEM
Experience Level					
Entry	\$79,921.48	\$69,762.50	2,325,269,357.16	\$48,221.05	\$2,821.92
Executive	\$191,512.14	\$192,018.50	4,982,936,328.34	\$70,589.92	\$5,842.06
Mid	\$108,714.98	\$100,000.00	3,577,978,949.27	\$59,816.21	\$2,118.80
Senior	\$160,277.51	\$153,600.00	4,077,583,040.43	\$63,855.96	\$1,405.21

HOW DO DATA SCIENCE SALARIES VARY BY EXPERIENCE LEVEL?



- The ANOVA test showed a statistically significant difference in salary based on experience level
 - P-value = 3.974 e-116

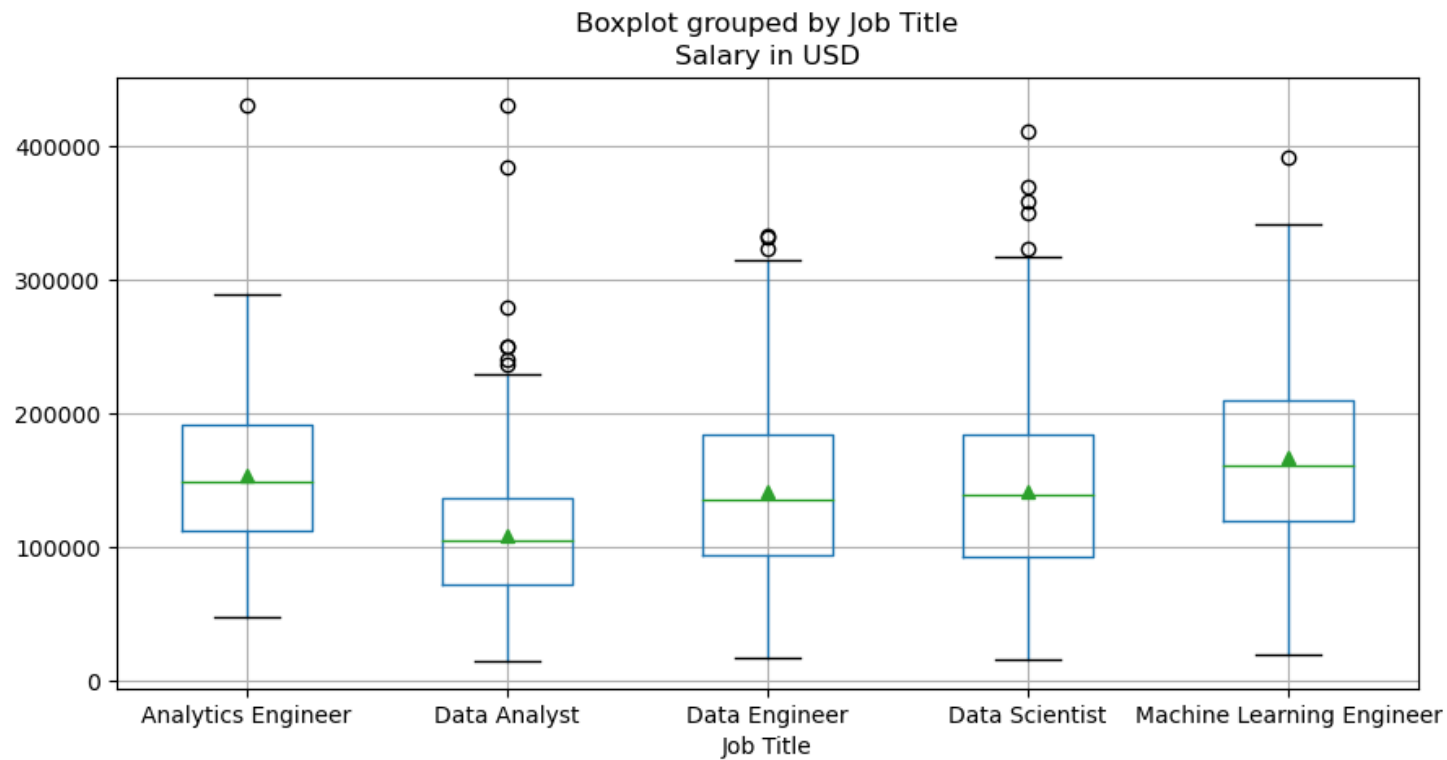
WHAT IS THE BREAKDOWN OF JOB TITLES FOR DATA SCIENCE JOBS?



- Data Engineer jobs comprised the majority of jobs with 31.5% and an average salary of \$142,000 USD
- Data Analyst jobs comprised 20.6% of jobs, with an average salary of \$109,500 USD

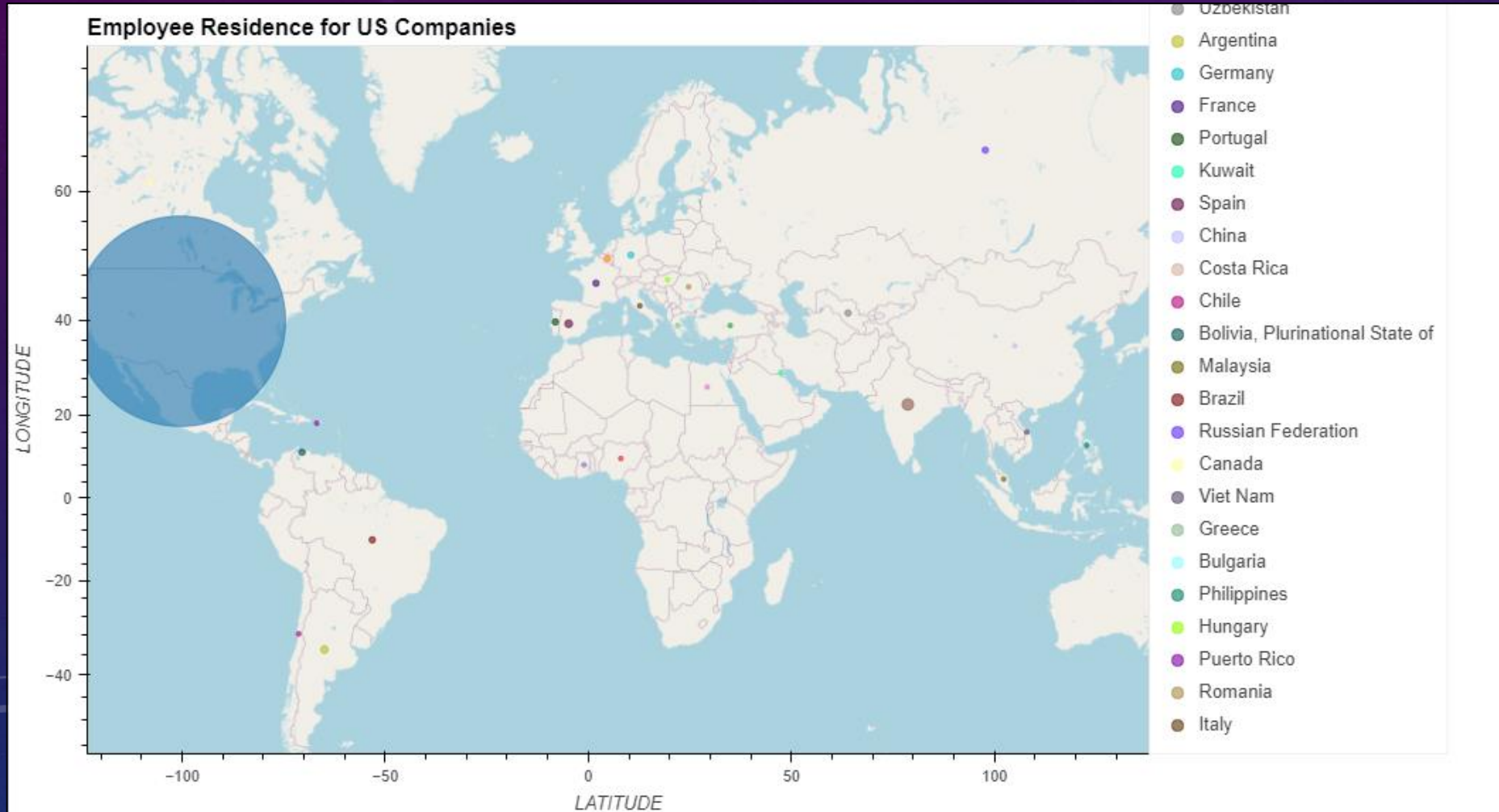
	Mean	Median	Variance	Std. Deviation	SEM
Job Title					
Analytics Engineer	\$154,258.96	\$149,400.00	3,383,133,047.36	\$58,164.71	\$5,062.59
Data Analyst	\$109,500.38	\$105,320.00	2,642,872,303.05	\$51,408.87	\$2,399.56
Data Engineer	\$142,033.87	\$135,223.00	4,019,691,477.38	\$63,401.04	\$2,392.92
Data Scientist	\$141,886.16	\$140,000.00	4,436,580,684.95	\$66,607.66	\$2,643.24
Machine Learning Engineer	\$167,249.51	\$161,310.00	5,095,864,503.89	\$71,385.32	\$4,121.43

HOW DO DATA SCIENCE SALARIES VARY BY JOB TITLE?



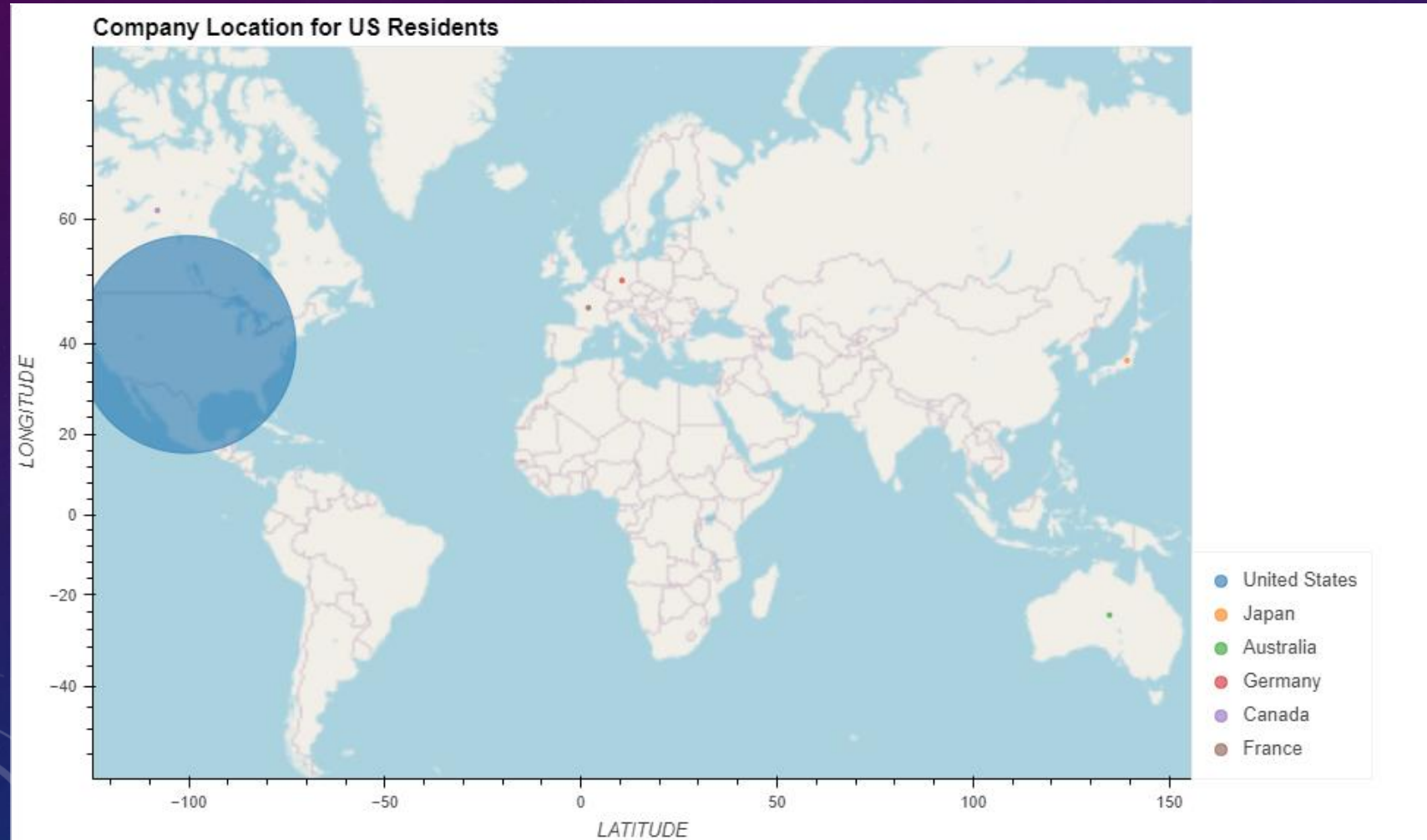
- The top 5 most common data science jobs made up 67.5% of all jobs in the dataset
- The ANOVA test showed a statistically significant difference in salary based on job title
 - P-value = 9.11×10^{-35}

DO US COMPANIES HIRE US RESIDENTS?



- US companies hired employees from 30 countries
- 98.1 % were US residents
- Of note, though the UK was 2nd in volume, no US companies hired UK residents

DO US RESIDENTS WORK FOR US COMPANIES?



- US residents worked for 6 countries
- 99.8 % were US companies
- Of note, though the UK was 2nd in volume, no US residents worked for UK companies

CONCLUSIONS / IMPLICATIONS

- Data science salaries have increased over time with medium size companies showing the highest growth and US companies consistently offering the most money
- 8.8% of data science jobs required entry-level experience, with a mean salary of \$ 80,000 USD and a median salary of \$ 70,000 USD
- Data Analyst positions made up 20.6% of the 5 most common jobs, with the lowest mean salary among that group (\$ 110,000 USD)
- Machine Learning Engineer positions made up 13.5% of the 5 most common jobs, with the highest mean salary among that group (\$ 167,000 USD)
- 98.1% of the employees hired by US companies were also US residents, and 99.8% of the companies US residents worked for were US companies



QUESTIONS?