**- Rank in descending order the average salary of Data Scientists by country (regardless of job title and experience level)**

Let's start with the first question, which is to rank the average salary of Data Scientists by country regardless of job title and experience level. However, before we begin, it's important to note that we have removed countries with less than 10 observations, as we believe that there is not enough data to accurately calculate the average salary for those countries.

According to our analysis, the United States has the highest average salary for Data Scientists with an average of 140k USD. Canada follows with an average of 105k USD, while Denmark and Great Britain come in third and fourth place with average salaries of 85k USD and 80k USD respectively. France and Spain rank fifth and sixth with average salaries of 65k USD and 50k USD respectively, while Germany ties with Spain for the sixth position. India has the lowest average salary with 27k USD.

It's important to note that while the United States has the highest average salary, there is a significant gap between Europe and America. We find it interesting to see that the average salaries in Europe are relatively lower, even though countries like Denmark and Great Britain have high salaries. It's also worth mentioning that some countries have been excluded from the analysis due to a small sample size, which might have affected the results. Overall, the data suggests that there are significant differences in average salaries for Data Scientists across different countries.

Chart, funnel chart

Description automatically generated

**- Rank in descending order the average salary of Data Scientists by job title (regardless of country and experience level)**

In our analysis of average salary per position, we have grouped all jobs into six categories, which are Data Architects, Data Scientists, Head of Data, Data Engineers, Data Analysts, and Machine Learning Jobs without removing any rows from the original dataset. We have created a graph to rank the average salary of Data Scientists by job title, regardless of country and experience level.

The graph shows that Data Architects earn the most, with an average salary of around 170k USD. Following Data Architects, Data Scientists, Head of Data, and Data Engineers earn around 130k USD on average. Data Analysts rank fifth, with an average salary of around 100k USD, while Machine Learning jobs come in last with an average salary of around 80k USD.

Chart, bar chart, funnel chart

Description automatically generated

Furthermore, we have created a second graph to show the top ten earning positions. The graph shows that four out of the top ten positions are from the Data Engineers group, three positions relate to Data Analyst positions, two to Data Scientists, and one to the Head position of the Data department. It's worth noting that we have removed positions with less than five observations, as we believe the information may not be accurate enough for such positions.

Chart, bar chart

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Overall, our analysis suggests that Data Architects are the highest earning job titles for Data Scientists, but it is important to keep in mind that in our data set there were only fer observations for this position, thus data may not be accurate. However, Data Engineers and Data Analysts are also well-compensated.

**- Does the company size affect the average salary (keeping the same experience level and job title)?**

Based on our analysis on company size and average salary, we have identified three types of companies in our dataset: Large (more than 250 employees and 364 observations in the dataset), Medium (between 50-250 employees and 725 observations), and Small (less than 50 employees and 118 observations). We have created a graph to show the average salary by company size, and the graph indicates that small companies pay an average salary of 70k USD, medium-sized companies pay an average of 130k USD, and large companies pay an average of 110k USD.

Chart, bar chart

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Furthermore, we have calculated the correlation between company size and average salary, and our analysis suggests that there is almost no correlation between these two factors. The correlation coefficient we obtained was 0.104. This implies that a company's size does not necessarily influence the average salary of Data Scientists, keeping the same job title and experience level.

In conclusion, our analysis suggests that there is no significant relationship between company size and average salary for Data Scientists. While larger companies may offer a slightly higher salary on average than small companies, the difference is not significant, and other factors may be more important determinants of salary, such as job title, experience, and industry.

**- Of the companies that employee data scientists what percentage are small, medium, and large?**

We have also analyzed which types of companies employ the most data-related jobs. Our Python analysis shows that 60.07% of companies that hire Data Scientists fall under the category of medium-sized companies, while 30.16% are large companies, and only 9.78% are small companies.

This suggests that medium-sized companies are more likely to hire Data Scientists compared to small or large companies. However, it is important to note that our dataset is limited and may not be representative of the entire industry. Additionally, other factors, such as the industry, location, and job title, may also influence the type of company that hires the most data-related jobs.

Overall, our analysis suggests that medium-sized companies are more likely to hire Data Scientists, but further research is needed to understand the broader trends in the industry.

**- Rank in descending order the remote work ratio by job title**

For this question, we have ranked the remote work ratio by job title in descending order. From our analysis, we found that the top five positions with the highest remote work ratio are Data Architect, Lead Data Analyst, Principal Data Engineer, Data Specialist, and Database Reliability Engineer. These positions have a 100% remote work ratio, indicating that they work fully remote. The positions with the lowest remote work ratio are Director of Data Science, Lead Data Scientist, and Big Data Engineer, with a remote work ratio of 54.17%, 62.50%, and 63.33%, respectively. Overall, the remote work ratio varies across different job titles, with some positions having a higher tendency for remote work than others.

**Chart, scatter chart

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**- Rank in descending order the remote work ratio by company size**

For our further analysis of the remote work ratio by company size, we categorized companies into three groups: small, medium, and large. We found that the remote work ratio was highest for medium-sized companies, with an average of 88.76%. Large companies had a lower remote work ratio of 78.85%, while small companies had the lowest at 77.12%. This suggests that medium-sized companies may be more open to remote work arrangements than larger or smaller companies.

**Chart

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**- What is the annual trend of average salaries of Data scientists?**

Further, lets look at the general trends in the industry. Over the past several years, there has been a growing demand for skilled data professionals across various industries. This has led to a significant increase in the number of data science job opportunities, as well as a rise in salaries for these positions.

The trend of increasing salaries can be seen across different levels of seniority and job titles within the data science field. This is likely due to the fact that data-driven decision making has become increasingly important for businesses and organizations, and as a result, the value of skilled data professionals has also increased.

As we saw in our analysis of the annual trend of average salaries of data scientists, there has been a steady increase in salaries over the past few years. In 2020, the average salary was 90kUSD, which increased to 100kUSD in 2021, and then to 125kUSD in 2022. The percentage increases in salary from year to year have also been significant, with a 10.80% increase in 2021 and a 28.13% increase in 2022.

Overall, the trend of increasing salaries in the data science industry is likely to continue in the coming years as the demand for skilled data professionals continues to grow.

Chart, line chart

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**- Which Job title has seen the highest salary increase YoY?**

Now, let's dive into the details of salary increases and explore which job title has seen the highest YoY growth in their salaries. From our python analysis we can see that Big Data Engineer has experienced the highest increase in salary, with a growth rate of 4.51% from 2021 to 2022. This could be due to the high demand for skilled professionals in this field, as companies continue to focus on managing and analyzing large amounts of data. Following Big Data Engineer, AI Scientist has also experienced significant growth in salary with a growth rate of 2.07% from 2021 to 2022. This could be due to the increasing adoption of artificial intelligence and machine learning technologies in various industries. Additionally, Applied Data Scientist, Database Reliability Engineer, and Data Engineering Manager have all seen substantial YoY salary increases, which could indicate the increasing importance of these roles in today's data-driven world.

Overall, the data shows that the salaries for data-related jobs are continuing to increase, making it a promising field for those looking to build a career in this area.

**- For each job title, how does the average salary vary depending on experience level?**

In last part let’s analyse, how salaries change for the same job title based on experience level. The analysis provides information on how the average salary for each job title varies with experience level. The experience level is classified into four categories, namely Entry-level/Junior, Mid-level/Intermediate, Senior-level/Expert, and Executive-level/Director. The analysis output shows that the average salary for each job title varies significantly based on experience level. For instance, an AI Scientist at the Entry-level/Junior experience level earns an average salary of 41k USD per year, while at the Executive-level/Director experience level, the average salary is much higher, at 200k USD per year. Similarly, a Big Data Engineer at the Senior-level/Expert experience level earns an average salary of 121k USD per year, which is more than three times the average salary earned by an Entry-level/Junior Big Data Engineer. We can see that there are few outliers in our dataset such as: Principal Data Engineer which for experience level offers significantly higher salary, however, the analysis clearly shows that the experience level is an essential factor that determines the average salary for each job title.

**Chart, bar chart

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