

Visualisation Results

Locations with High Job Occurrence and Average Salaries

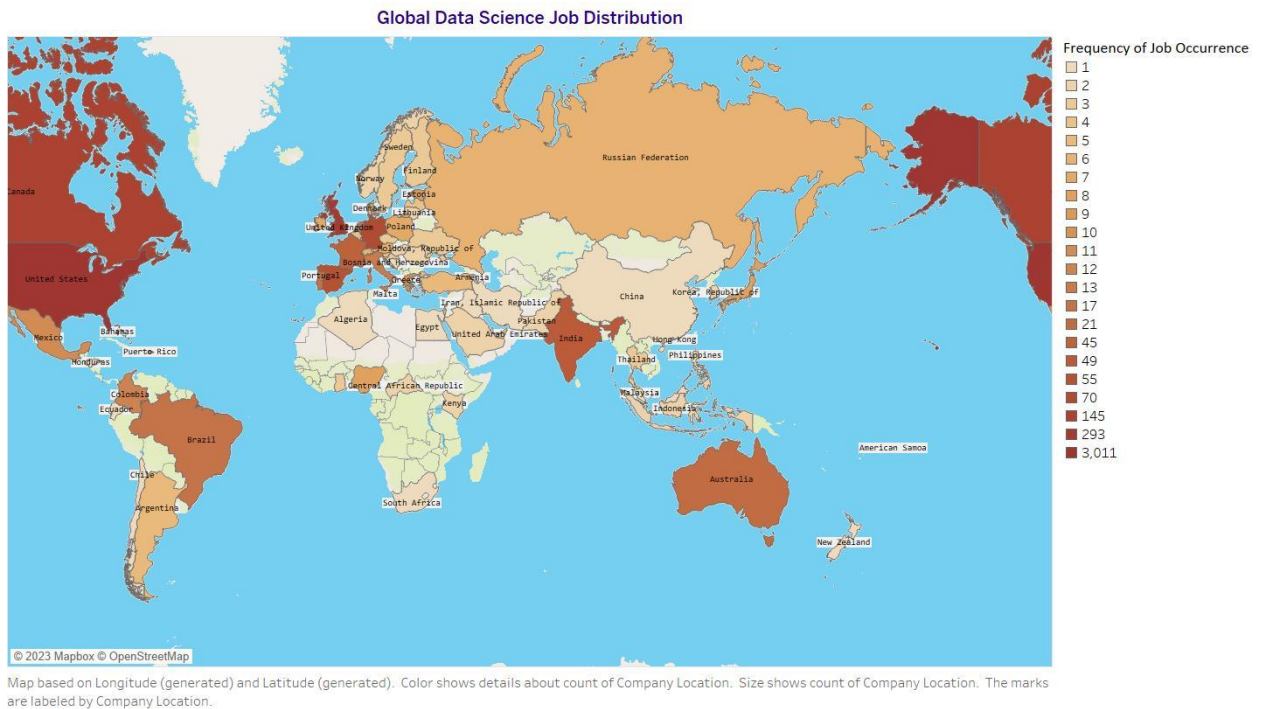


Figure 1: Map of Global Data Science Job Occurrence frequency

The map highlights global data science job distribution, with the United States at the forefront, followed by the United Kingdom, Canada, and most European countries, revealing regional variations and worldwide demand. By highlighting potential areas for growth and international collaboration, this highlights the field's global nature. Job seekers are encouraged to explore areas other than traditional tech hubs by this insight, which suggests rewarding possibilities worldwide.

Next, we will explore countries with the highest average salaries for data science jobs.



Figure 2: Locations with the Highest Average Data Science Salaries Globally

Figure 2 illustrates the top locations with the highest average salaries for data science jobs are Qatar, Israel, and Puerto Rico, ranging from \$115,188.3 to \$300,000. The list includes a diverse range of countries, with the United States and Canada also securing positions. This insight suggests that high-paying opportunities exist in various global locations, emphasizing the importance of considering international options for a fulfilling career in data science.

Diverse Job Titles in Data Science

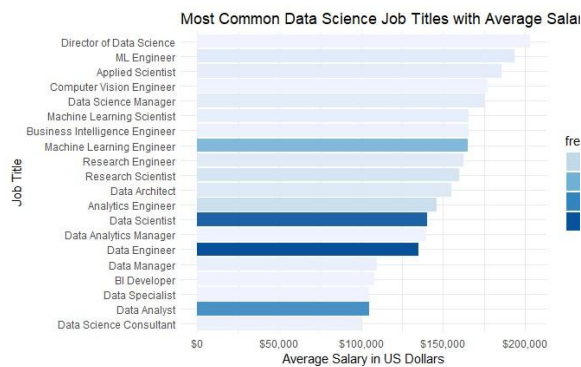


Figure 3: Most common 20 Data Science Job Titles with the average salary

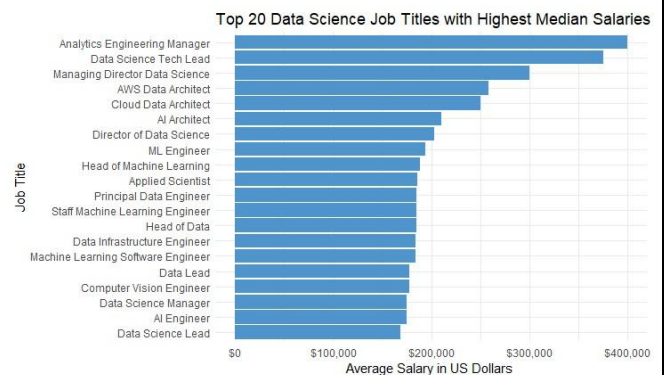


Figure 4: Top 20 Data science Job titles with highest average salary

In Figure 3, we observe the distribution of the 20 most common Data Science Job Titles without specific salary values. "Data Engineer" emerges as the most prevalent role, indicating its high demand in the field. It is notable for its significant average salary. "Data Scientist" holds a pivotal position, underlining its crucial role in the data science landscape. Specialized roles like "ML Engineer" command higher median salaries, suggesting a demand for advanced skills in machine learning. Despite their lower frequencies, roles such as "Research Scientist" and "Applied Scientist" boast competitive median salaries, emphasizing the significance of research-oriented positions in the data science job market. "Analytics Engineer" strikes a balance, showcasing demand for hybrid skill sets in analytics and engineering.

Transitioning to Figure 4, we explore the median salaries of the top 20 data science job titles with the highest average earnings. Specialized roles like AI Architect and AWS Data Architect secure top positions, indicating their high value in the industry. Managerial roles, like Analytics Engineering Manager, demonstrate substantial median salaries, suggesting the importance and compensation associated with leadership positions. Foundational roles such as BI Data Analyst and BI Data Engineer play crucial functions, maintaining median salaries at a consistent level. This underscores the enduring demand for core data science functions within the job market. The chart depicts a diverse landscape, showcasing lucrative opportunities across various data science roles. This analysis serves as a valuable reference for professionals and organizations navigating the dynamic field of data science, highlighting trends in job prevalence and compensation without specific salary values.

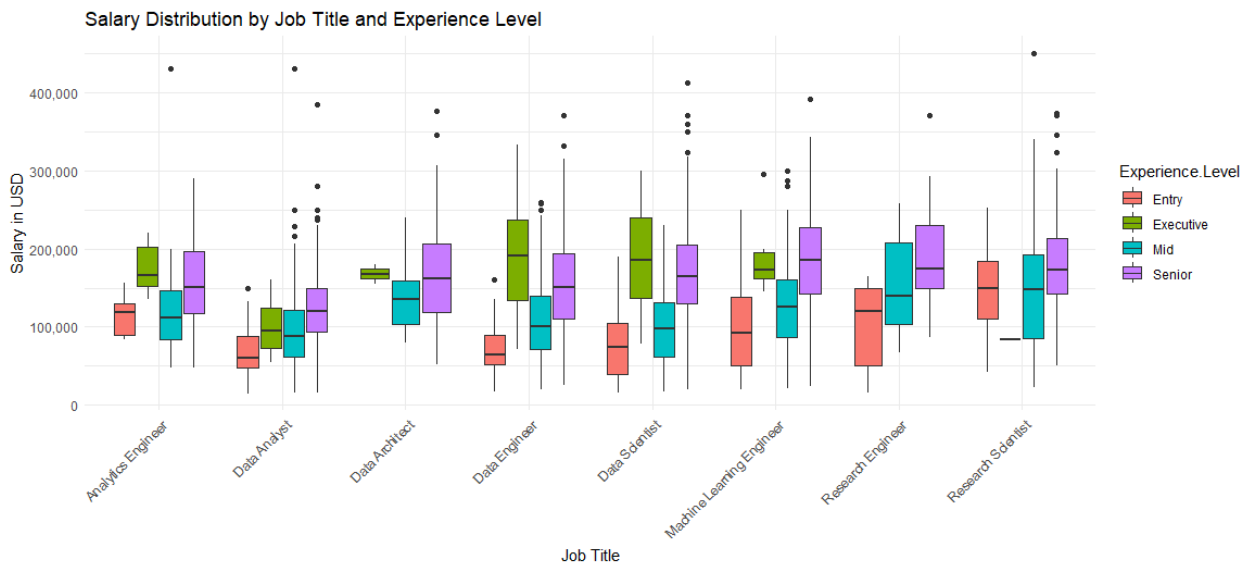


Figure 5: Salary distributions for different Experience levels in top 8 Job Titles

Simultaneously, Figure 5 delves into the median salary variations for data science job titles showed noticeable salary range, from 2020 to 2023. Notably, "Data Analyst Lead" and "Applied Machine Learning Scientist" initially started with high salaries in 2021 and 2022, respectively, showcasing substantial variations over the years. However, a notable shift in compensation dynamics is evident by 2023, as certain roles like "Data Analyst Lead" and

"Applied Machine Learning Scientist" experience a decrease in salaries. In 2023, salaries across different job titles show less variation, signaling a stabilizing trend within the data science job market.

Conversely, roles like "Data Analyst" and "Data Scientist" demonstrate consistent increases in salary variation. Despite higher variations, their median salaries continue to rise each year, indicating sustained demand and appreciation for these roles in the data science landscape. This nuanced exploration of salary trends underscores the dynamic nature of the industry, with certain roles experiencing fluctuations while others demonstrate steady growth.

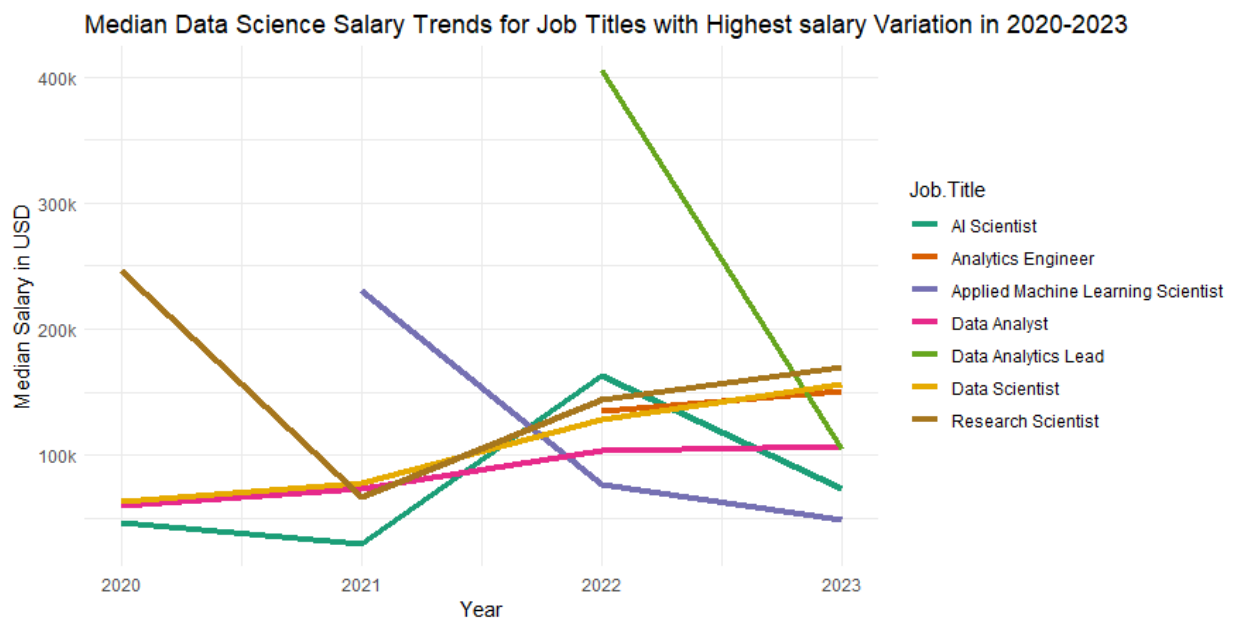


Figure 6: Salary Trends for Job Titles with the Highest Salary Variations (2020-2023)

In analyzing salary distributions across experience levels in common data science roles in Figure 6, intriguing patterns emerge. In certain common roles, executive-level workers earn less than their senior colleagues, which puts pressure on traditional pay structures. Remarkably, even entry-level professionals in research scientists command higher salaries than individuals at any level in the data analyst category. Roles linked to research fields exhibit a discernible pattern, notably lacking executive-level positions. This observation aligns with the inherent nature of research-focused roles, where expertise and experience often play a more pivotal role than hierarchical seniority. Noteworthy in this landscape is the role of Data Architect, which stands out, underscoring its specialized nature. It's particularly noteworthy that Data Architect positions are rarely offered at entry-level, emphasizing the rarity of such opportunities for newcomers.

In broad terms, there are fewer salary outliers for entry-level and executive roles in data science, with a noticeable concentration of higher outliers for senior and mid-level positions.

This deviation from traditional thinking draws attention to the distinct dynamics of compensation that are present in this developing field. In research-oriented roles, prioritizing expertise over seniority challenges perceptions and highlights how pay structures in the dynamic field of data science are dynamic and nuanced.

Exploring Different Employment Types, Expertise Levels and Experience Levels

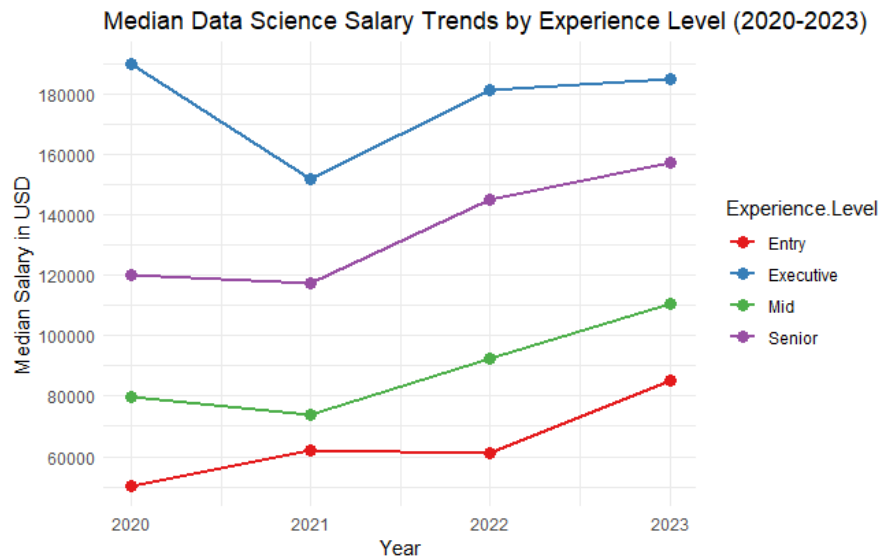


Figure 7: Data science Salary trends for different Experience levels

The evolving salary trends in data science highlight consistent growth in entry-level salaries. However, the patterns for mid-level and executive positions reveal a more dynamic scenario. After a dip in 2021, salaries for these positions rebounded in 2022, only to experience another decline in 2023 for executive roles. This complexity underscores the need for data science professionals to navigate their career paths with an understanding of the industry's evolving compensation landscape.

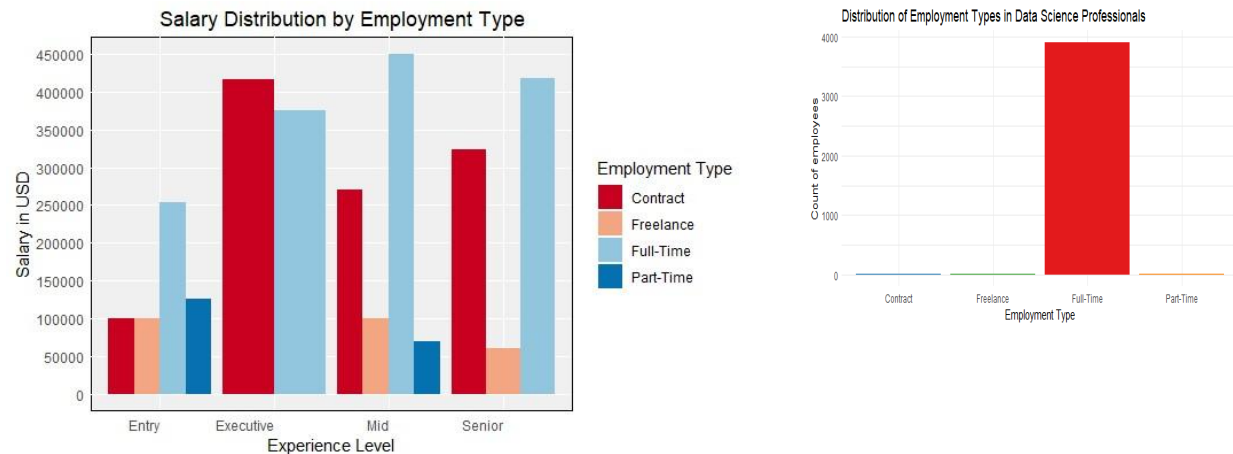


Figure 8: Data science salary distribution by Employment Types

Figure 8 illustrates that the data science field is dominated by full-time employment, with top-tier positions tending to pay more. Interestingly, executives who choose contract arrangements tend to receive higher salaries, indicating that this type of employment should be strategically used for specialized roles. The fact that there are few freelance opportunities highlights its specific nature. For people in these stages of their careers, part-time jobs, which are rare and typically associated with entry- and mid-level experience, offer flexibility.

This underscores the importance for job seekers to comprehend prevalent data science employment types. Executives might discover rewarding prospects in contractual roles, while freelance positions offer distinct yet specialized experiences. Entry and mid-level professionals seeking flexibility may explore part-time opportunities. Navigating these dynamics in the dynamic data science job market empowers individuals to make informed career decisions.

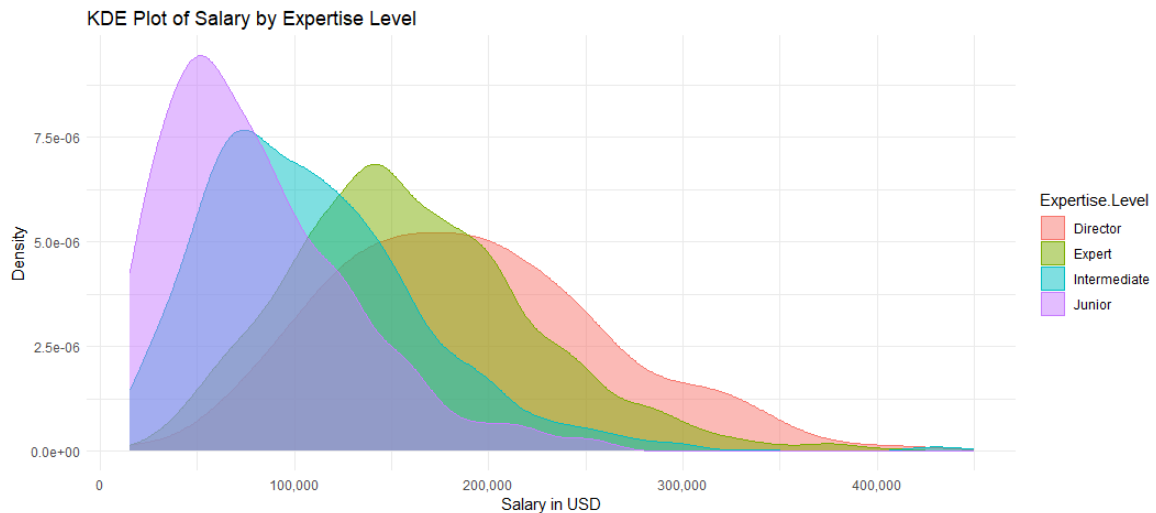


Figure 9: Salary distribution on Different Expertise Level

The left-skewed KDE plot in figure 9 reveals that the majority of data science salaries are concentrated in the lower salary range, with junior-level positions exhibiting a prominent peak around \$50,000. As expertise levels increase, the distribution becomes broader, indicating a more diverse range of salaries. Interestingly, director-level salaries show a flatter peak, suggesting greater variability in compensation for individuals at this expertise level.

Data science professionals should grasp the salary dynamics across expertise levels, guiding strategic decisions on career growth and negotiation. Awareness of potential salary variations and market trends is crucial for navigating the dynamic field effectively.

Salary Variations with Company Size & Salary Outliers

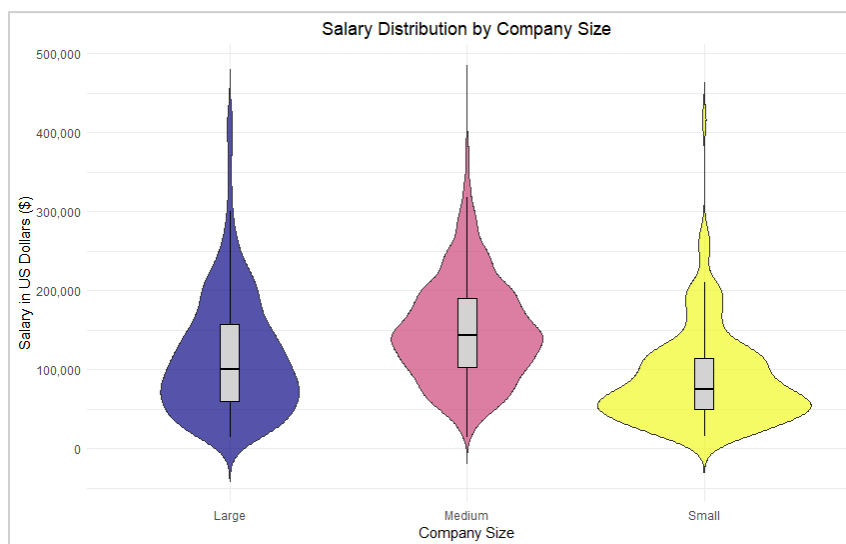


Figure 10: Data science Job Salaries with Different company sizes

The salary patterns reveal that medium-sized companies, in contrast to large corporations, may prioritize competitive compensation to attract and retain data science talent. Symmetric salary distributions in medium-sized firms suggest a balanced approach, while left-skewed distributions in small and large companies indicate different organizational strategies or priorities. This insight encourages data science professionals to consider the dynamics associated with company size when assessing job opportunities.

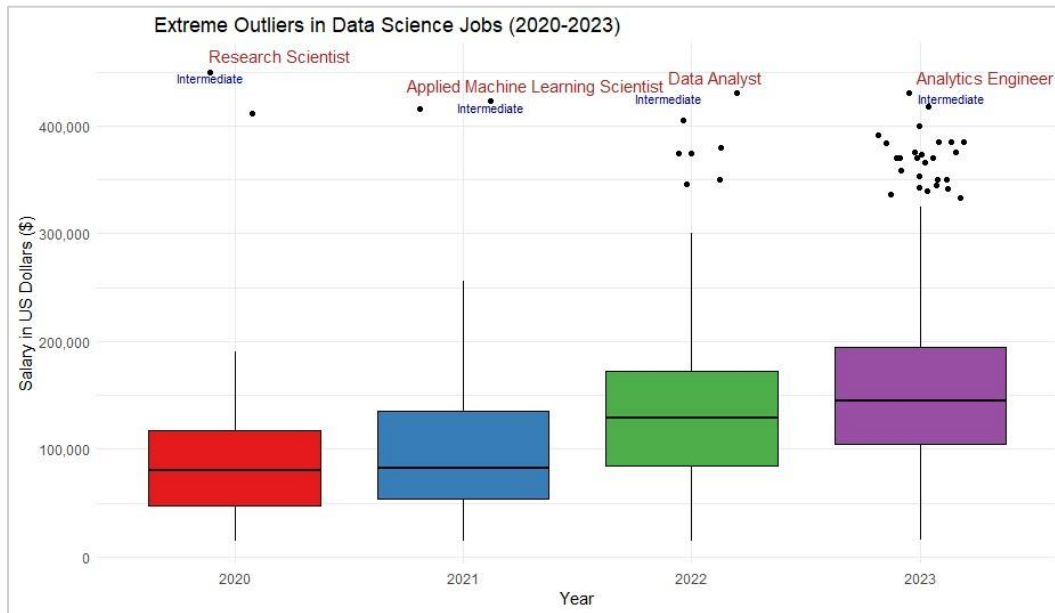


Figure 11: Extreme outliers in data science salaries by year

The plot depicting extreme outliers in data science salaries illustrates a consistent upward trend from 2020 to 2023. Notably, each year showcases distinct roles as extreme outliers, suggesting dynamic shifts in the highest-paying positions within the field. In 2020, Research Scientist salaries stood out, followed by Applied Machine Learning Scientist in 2021, Data Analyst in 2022, and Analytics Engineer in 2023. This observation highlights the evolving landscape of high-paying roles in data science, offering valuable insights for professionals and organizations navigating the competitive salary landscape. Additionally, it's noteworthy that all these outliers belong to the expertise level "Intermediate," indicating a specific pattern within this skill category. This insight can guide professionals and organizations in understanding the evolving landscape of high-paying roles and making informed decisions in navigating the competitive salary landscape.