

Data Analyst Job Market Analysis

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0.1 Introduction

The data analytics field has experienced exponential growth over the past decade, driven by organizations' increasing reliance on data-driven decision-making. Understanding the job market landscape for data analysts is crucial for multiple stakeholders: job seekers navigating career opportunities, employers developing competitive compensation strategies, educational institutions designing relevant curricula, and policymakers identifying workforce development needs.

This report analyzes 400 data analyst job postings, examining salary trends, geographic distribution, industry patterns, experience requirements, technical skills demand, and company characteristics. The analysis employs five geographic maps and multiple statistical visualizations to uncover patterns and relationships that inform strategic decision-making.

The dataset encompasses job postings from diverse industries, company sizes, and geographic locations across the United States, providing a representative snapshot of the current data analyst job market. By analyzing median salary estimates, minimum years of experience requirements, data language preferences, and geographic clustering, this report offers actionable insights for understanding market dynamics and identifying opportunities.

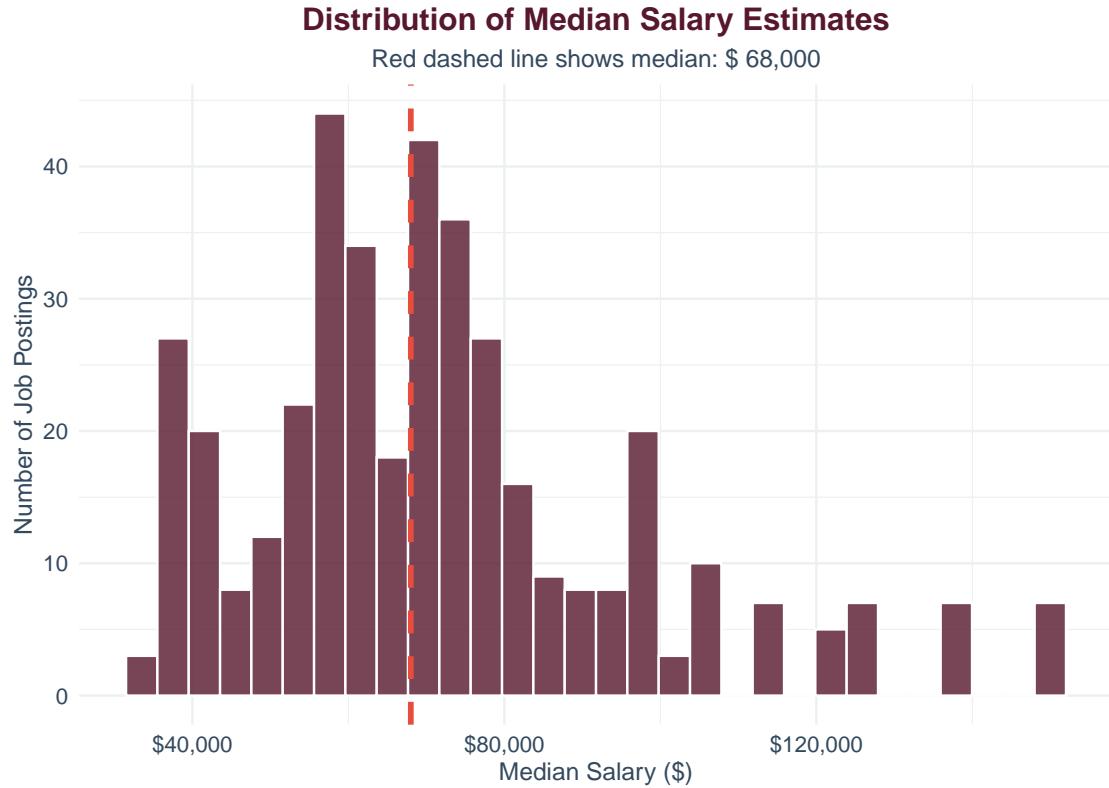
0.2 Executive Summary

This report analyzes 400 data analyst job postings across the United States, examining salary trends, geographic distribution, industry patterns, experience requirements, technical skills demand, and company characteristics. The analysis reveals significant geographic clustering of opportunities, with California leading in both job volume and compensation levels. Experience requirements vary substantially by region, and technical skill demands show distinct geographic patterns.

Key Highlights: - Median salary: \$68,000 (range: \$33,500 - \$150,000) - Geographic concentration: California dominates with 110 postings - Experience-salary relationship: Weak positive correlation ($r = 0.061$) - Most common technical requirement: Neither (63.7% of postings)

0.3 1. Salary Analysis

0.3.1 1.1 Overall Salary Distribution



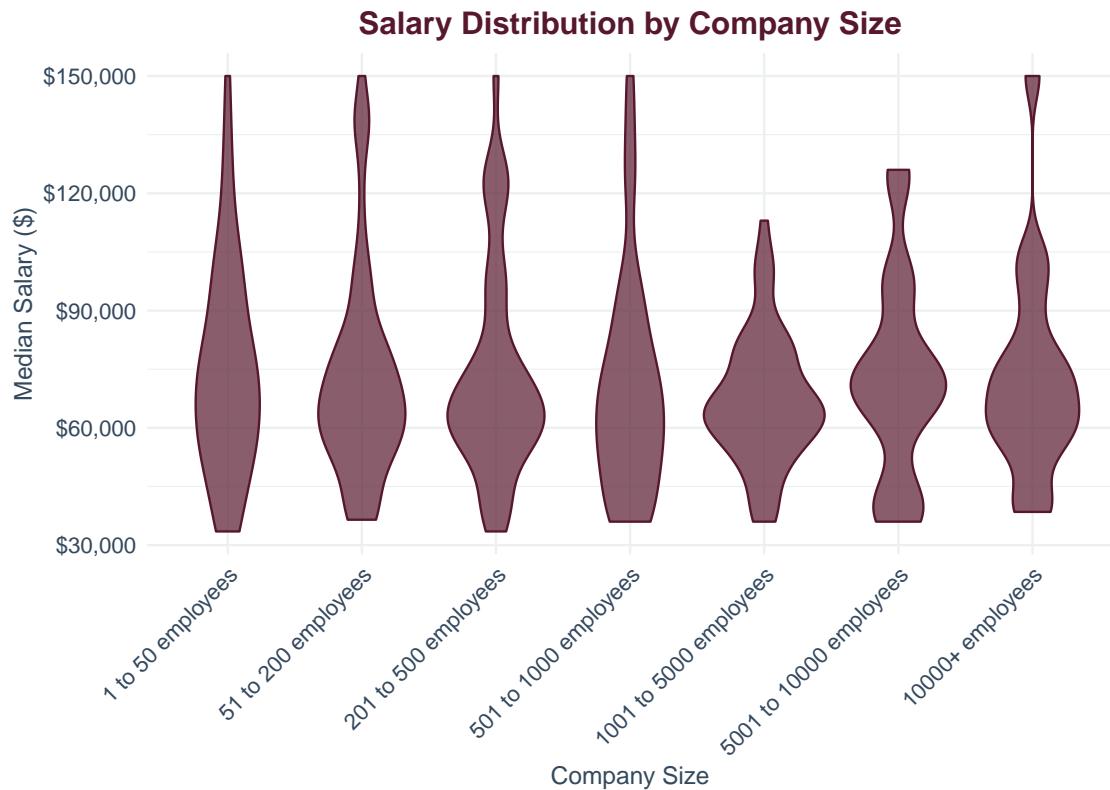
The salary distribution analysis reveals that data analyst positions show a median salary of \$68,000 across all postings, with a range from \$33,500 to \$150,000. As shown in Figure 1, the distribution is right-skewed, indicating that while most positions cluster around the median, there are opportunities for significantly higher compensation. The relationship between experience and salary, as well as salary variations by technical skills, are examined in subsequent sections (see Section 4.2 and Section 5.1).

0.3.2 1.2 Salary by Experience Level



Analysis of salary by experience level (Figure 2) demonstrates a clear relationship between years of experience and compensation. Senior-level positions (6-8 years) show the highest median salaries, followed by mid-level positions (3-5 years). The distribution reveals substantial variation within each category, suggesting that factors beyond experience—such as location, industry, and technical skills—significantly influence compensation. Detailed statistics are available in Supporting Information Table 1.

0.3.3 1.3 Salary by Company Size



Company size analysis (Figure 3) reveals interesting patterns in compensation. Smaller companies (1-50 employees) and very large companies (10,000+ employees) tend to offer competitive salaries, while mid-sized companies show more variation. This pattern may reflect different compensation strategies: startups and small companies may offer higher salaries to attract talent, while large corporations leverage their brand and benefits packages. See Supporting Information Table 2 for detailed statistics.

0.4 2. Geographic Analysis

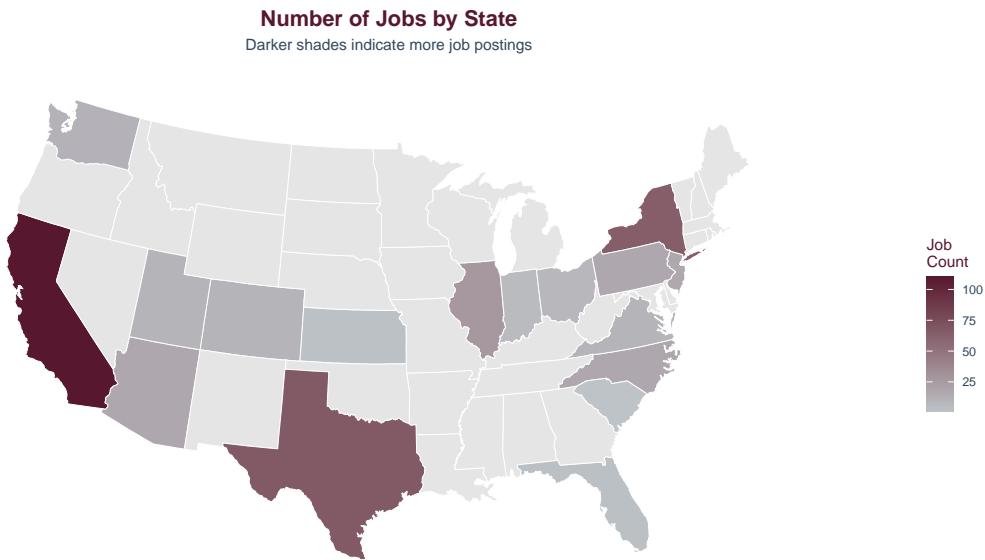
The geographic distribution of data analyst positions reveals significant regional clustering. Five maps illustrate different aspects of the geographic landscape, showing not only where opportunities are concentrated but also how compensation, experience requirements, and skill demands vary across regions.

0.4.1 2.1 Number of Jobs by State

Table 1: Top 15 Cities by Job Postings

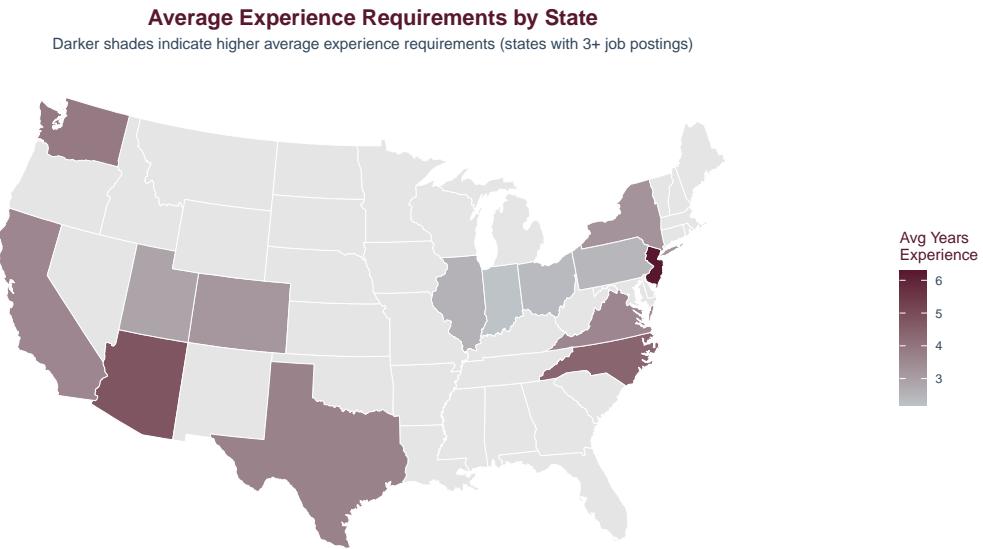
City	State	Job Count	Mean Salary
New York	NY	57	69649
Chicago	IL	23	81935
San Francisco	CA	17	104029
Austin	TX	16	57594
Los Angeles	CA	15	64033
Charlotte	NC	13	66077
Jersey City	NJ	12	69000
San Antonio	TX	12	66750
San Diego	CA	12	91792

City	State	Job Count	Mean Salary
Columbus	OH	8	43250
Denver	CO	8	75375
Houston	TX	8	68375
Dallas	TX	7	52929
Philadelphia	PA	7	62571
Salt Lake City	UT	7	37714



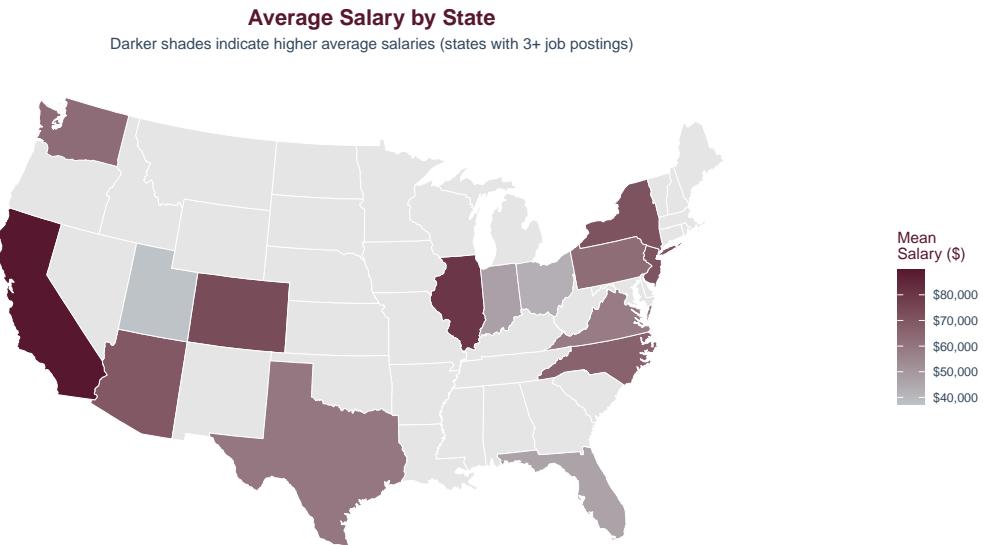
Map 1 (Figure 5) illustrates the geographic concentration of data analyst job postings. California dominates with 110 postings, followed by Texas and New York. The map reveals a clear coastal bias, with major technology hubs and financial centers showing the highest concentration of opportunities. This geographic clustering aligns with known technology and business centers, suggesting that data analyst roles are concentrated in regions with established data-driven industries. The top cities table above shows that major metropolitan areas drive much of this concentration.

0.4.2 2.2 Average Experience Requirements by State



Map 2 (Figure 7) illustrates average experience requirements by state, revealing interesting regional patterns. Some states with high job concentrations show lower average experience requirements, suggesting more entry-level opportunities, while others demand more experienced candidates. This variation may reflect different industry compositions or market maturity levels across regions.

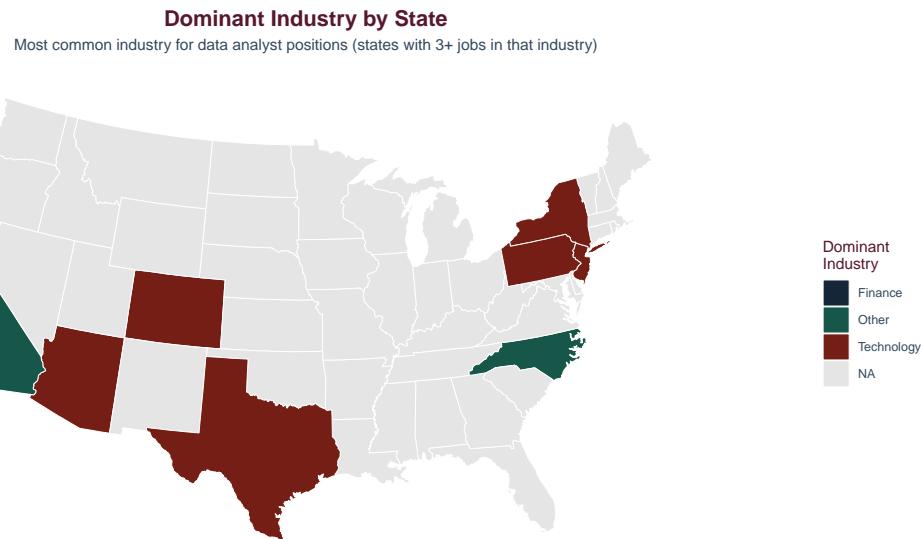
0.4.3 2.3 Average Salary by State



Map 3 (Figure 6) shows average salary by state, revealing significant regional variation in compensation. States with high job concentrations, particularly California, also tend to offer higher average salaries, reflecting

cost of living adjustments and competitive markets. The map highlights that salary levels are not uniform across regions, with coastal states generally offering higher compensation than interior states. This pattern suggests that location is a critical factor in compensation negotiations.

0.4.4 2.4 Dominant Industry by State



Map 4 (Figure 8) shows the dominant industry category for data analyst positions by state. Technology-focused states are clearly visible, as are regions dominated by finance and healthcare sectors. This map helps identify which industries drive data analyst demand in different regions, providing insights for job seekers targeting specific sectors.

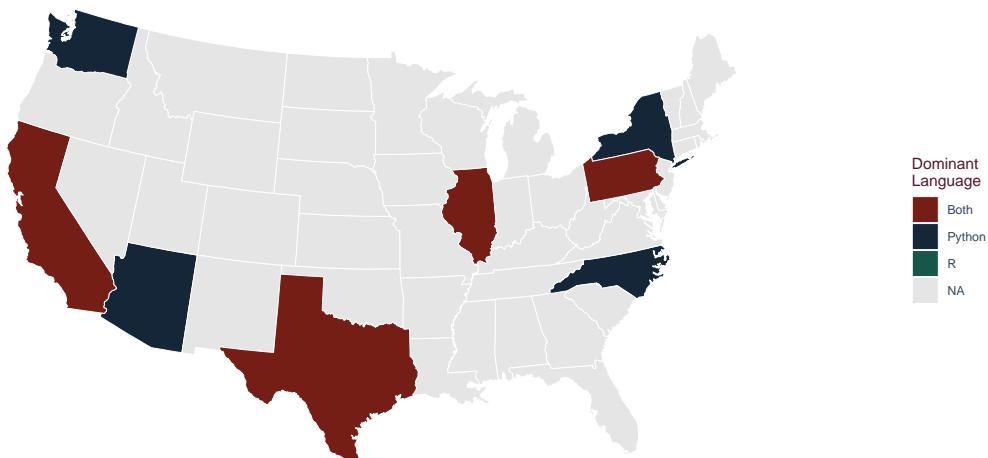
0.4.5 2.5 Dominant Data Language Requirement by State

Table 2: Distribution of Data Language Requirements

Data Language	Count	Percentage (%)	Mean Salary	Median Salary
Neither	255	63.7	70433	68000
Both	69	17.2	75710	68500
Python	61	15.2	74836	69000
R	15	3.8	64533	61500

Dominant Data Language Requirement by State

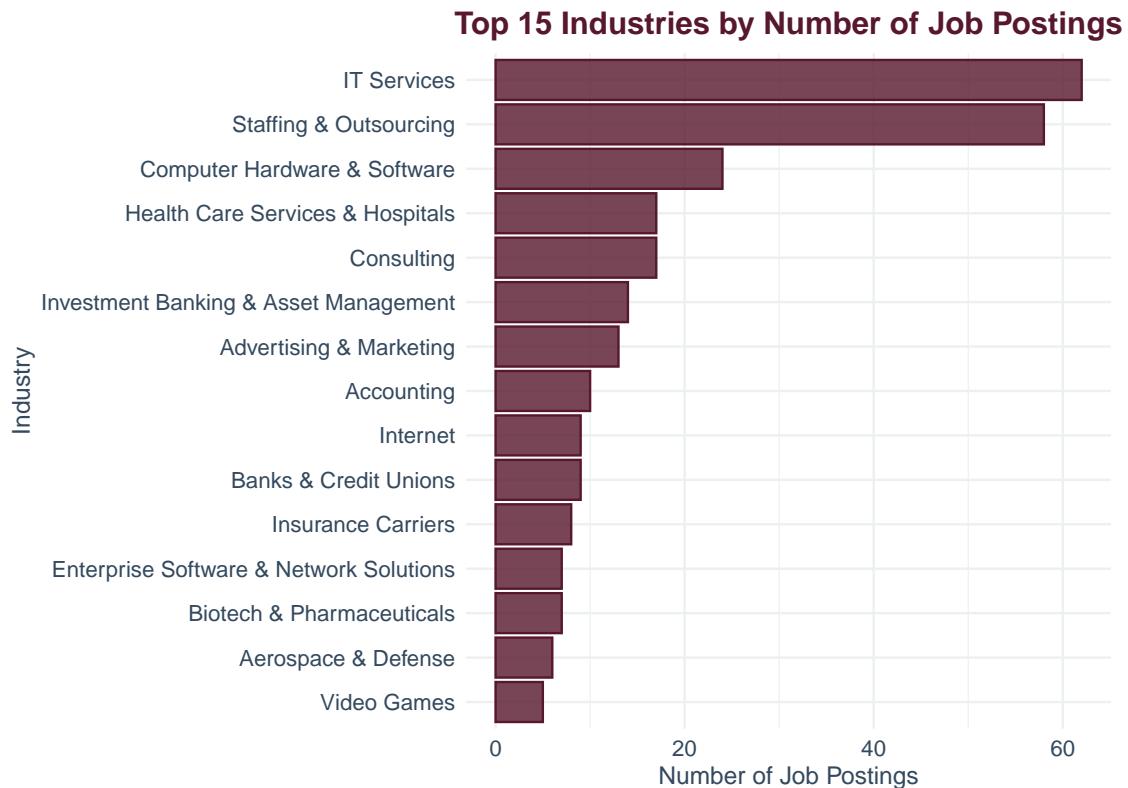
Most common data language requirement (states with 3+ jobs requiring Python, R, or Both)



Map 5 (Figure 9) reveals geographic patterns in technical skill requirements. The map shows which data language (Python, R, or Both) is most commonly required in each state. This visualization helps identify regional preferences for specific technical skills, which may reflect local industry standards or educational program focus areas. The table above shows the overall distribution of language requirements across all job postings.

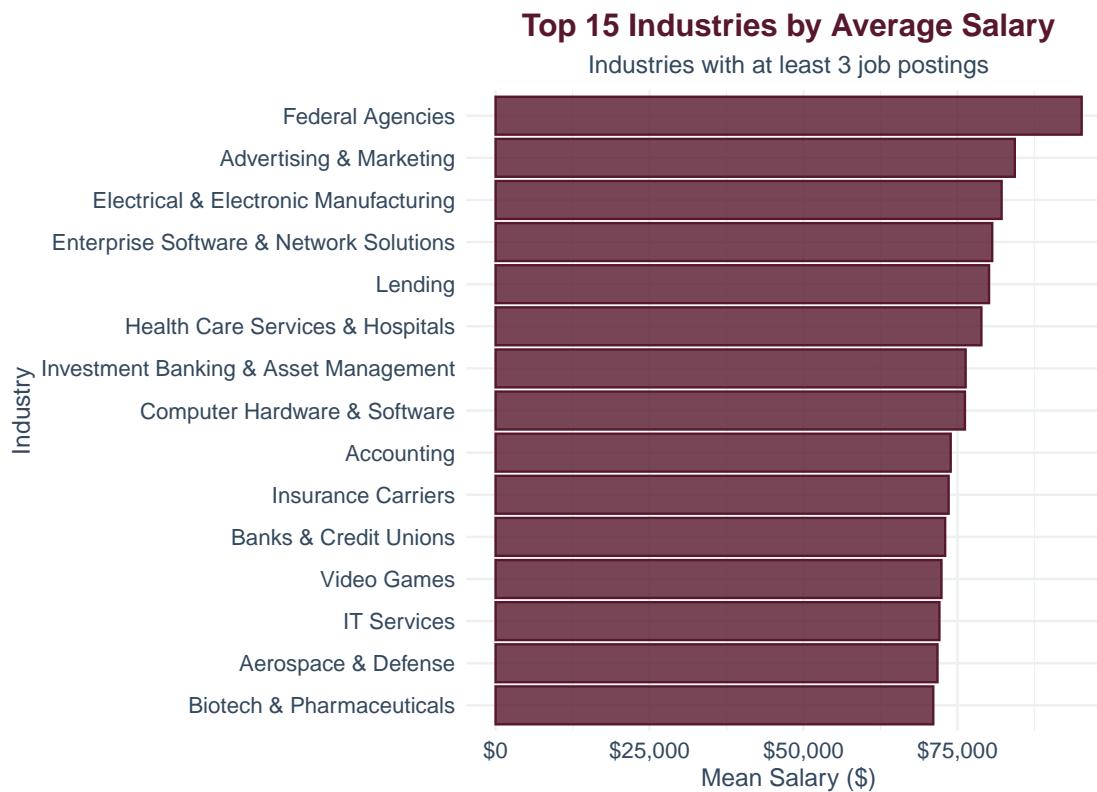
0.5 3. Industry Insights

0.5.1 3.1 Industry Distribution



Industry analysis (Figure 10) shows that IT Services leads with 62 postings, followed by Staffing & Outsourcing and Computer Hardware & Software. This distribution reflects the broad applicability of data analysis skills across sectors. The technology sector dominates, but opportunities exist across diverse industries, from healthcare to finance. Detailed industry statistics are available in Supporting Information Table 3.

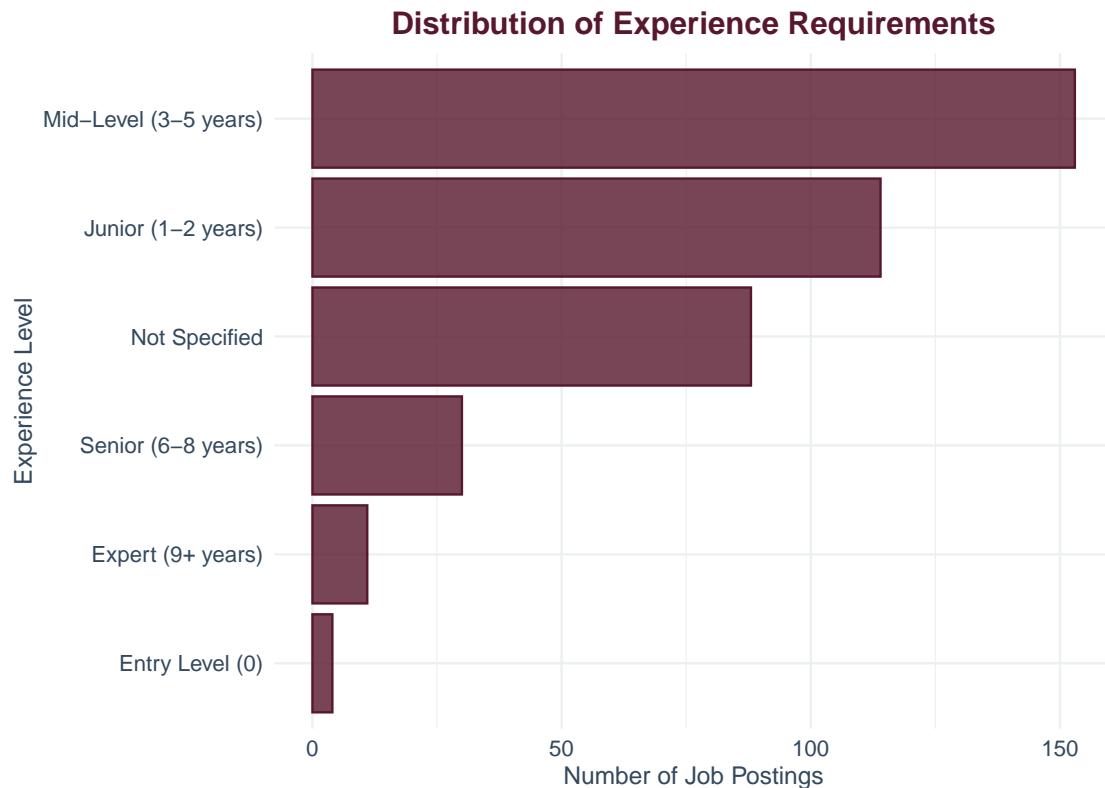
0.5.2 3.2 Salary by Industry



Salary analysis by industry (Figure 11) reveals significant variation in compensation across sectors. Investment Banking & Asset Management and certain technology sectors offer the highest average salaries, while other industries show more moderate compensation levels. This variation reflects industry-specific factors including profit margins, competition for talent, and the strategic importance of data analytics within each sector. See Supporting Information Table 3 for complete industry salary data.

0.6 4. Experience Requirements Analysis

0.6.1 4.1 Distribution of Experience Requirements

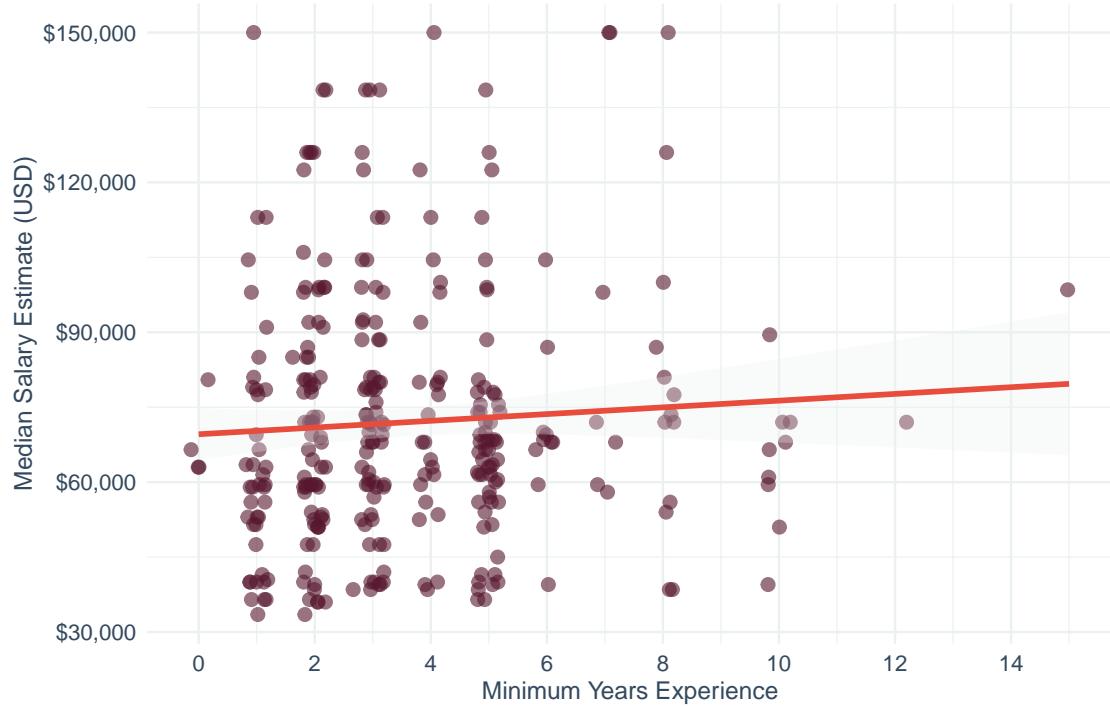


The distribution of experience requirements (Figure 12) shows that mid-level positions (3-5 years) represent the largest category at 38.2%, followed by junior positions (1-2 years) at 28.5%. This distribution suggests a healthy job market with opportunities across experience levels, though entry-level positions are less common. The prevalence of mid-level requirements indicates that employers value candidates with some practical experience. Complete distribution statistics are in Supporting Information Table 5.

0.6.2 4.2 Salary vs. Experience Relationship

Minimum Years Experience vs. Median Salary Estimate

Scatter plot with linear regression trend line and confidence interval

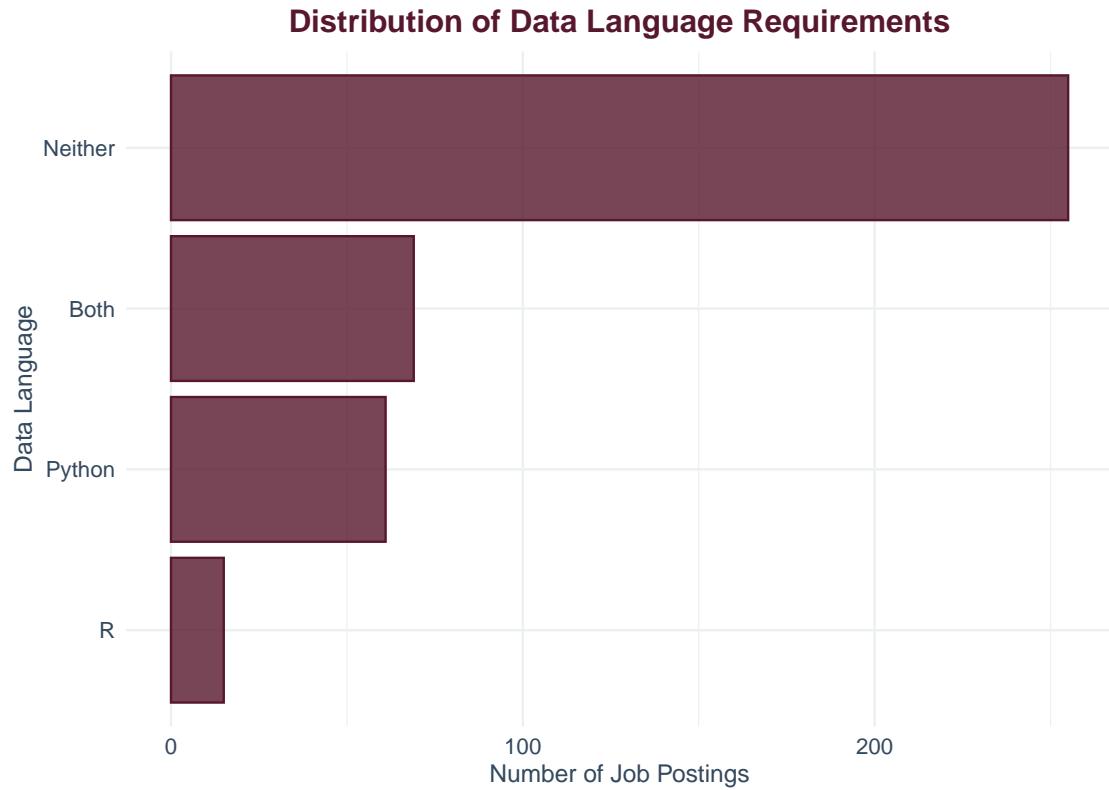


The scatter plot (Figure 13) reveals a weak positive correlation ($r = 0.061$) between minimum years of experience and median salary estimates. While more experience generally associates with higher salaries, the relationship is not strong. The linear regression trend line shows a modest upward slope, but the wide confidence interval and substantial scatter suggest significant variability.

Key observations: (1) substantial salary variation exists at all experience levels, with some entry-level positions (0-2 years) offering salaries comparable to senior positions (6+ years); (2) the relationship appears non-linear, with diminishing returns at higher experience levels; (3) numerous outliers suggest that factors beyond experience—such as location, industry, technical skills, and company size—play critical roles in determining compensation. This pattern highlights that experience alone is not a reliable predictor of salary in the data analyst market.

0.7 5. Technical Skills Analysis

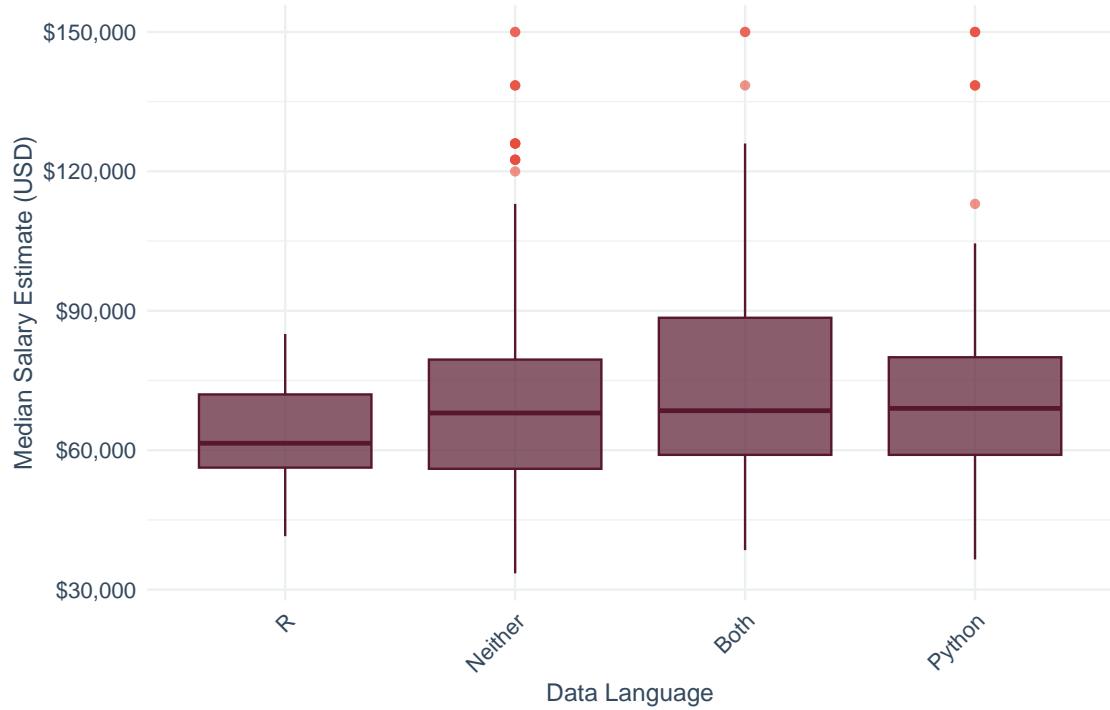
0.7.1 5.1 Data Language Requirements



Technical skills analysis reveals that Neither is the most common requirement, appearing in 255 postings (63.7%), as shown in Figure 14.

Median Salary by Data Language Requirement

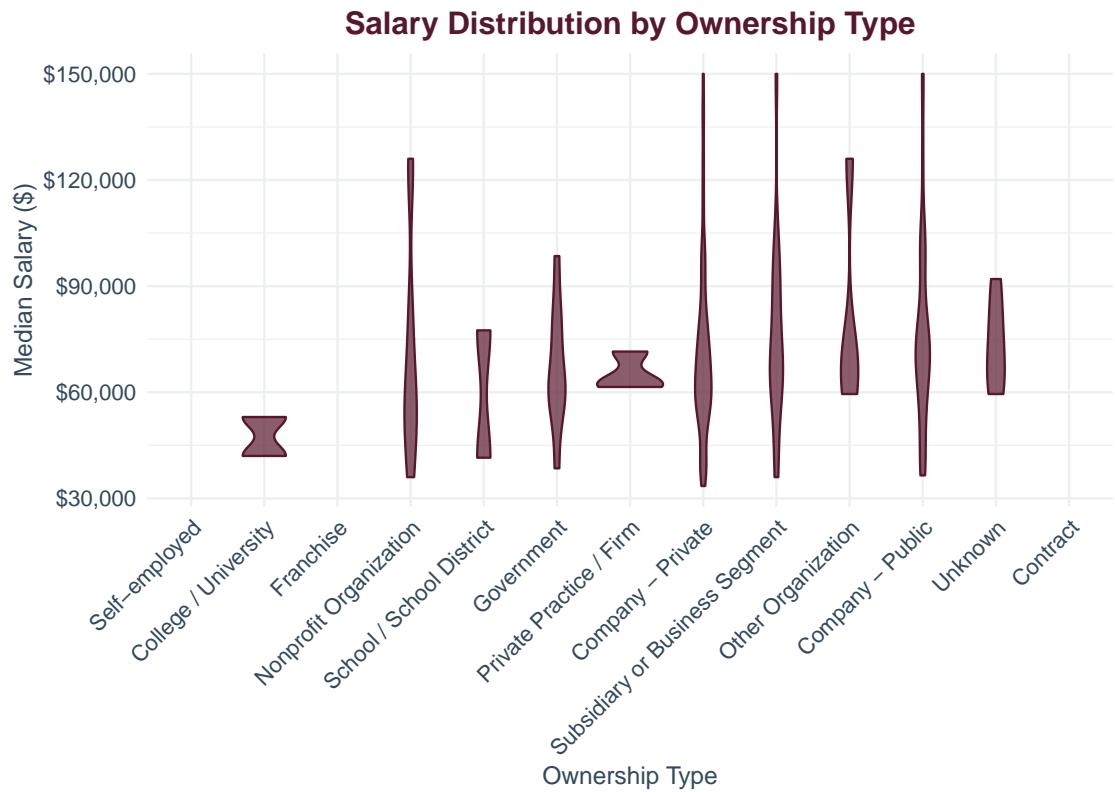
Box plot showing salary distribution across different language requirements



The box plot (Figure 15) shows salary distributions by data language requirement. Positions requiring both Python and R, or Python alone, show slightly higher median salaries, suggesting that specific technical skills can command premium compensation. The visualization reveals substantial variation within groups, indicating that technical skills are just one component of the compensation equation, with location, industry, and experience also playing critical roles. Detailed statistics are available in Supporting Information Table 6.

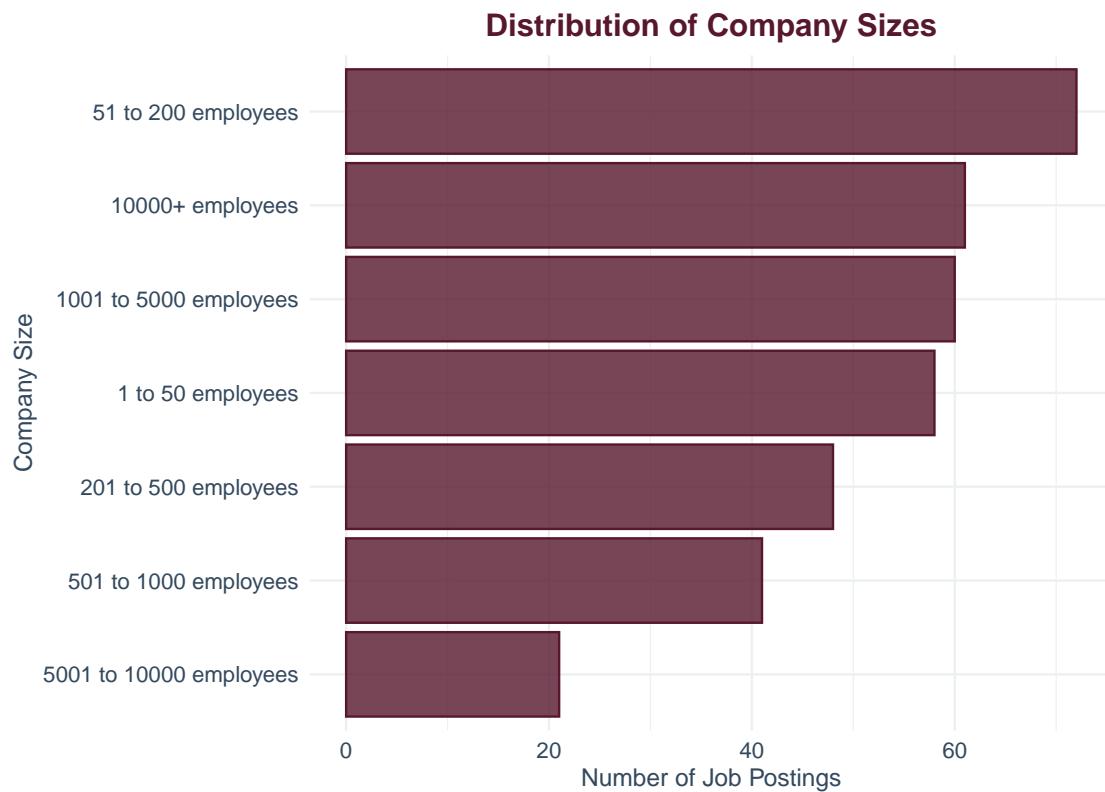
0.8 6. Company Characteristics

0.8.1 6.1 Salary by Ownership Type



Company ownership type analysis (Figure 16) shows that public companies and certain specialized organizational types tend to offer higher median salaries. This pattern may reflect larger compensation budgets, more structured pay scales, or different business models. The variation within each category suggests that ownership type is one of many factors influencing compensation. Complete ownership type statistics are in Supporting Information Table 7.

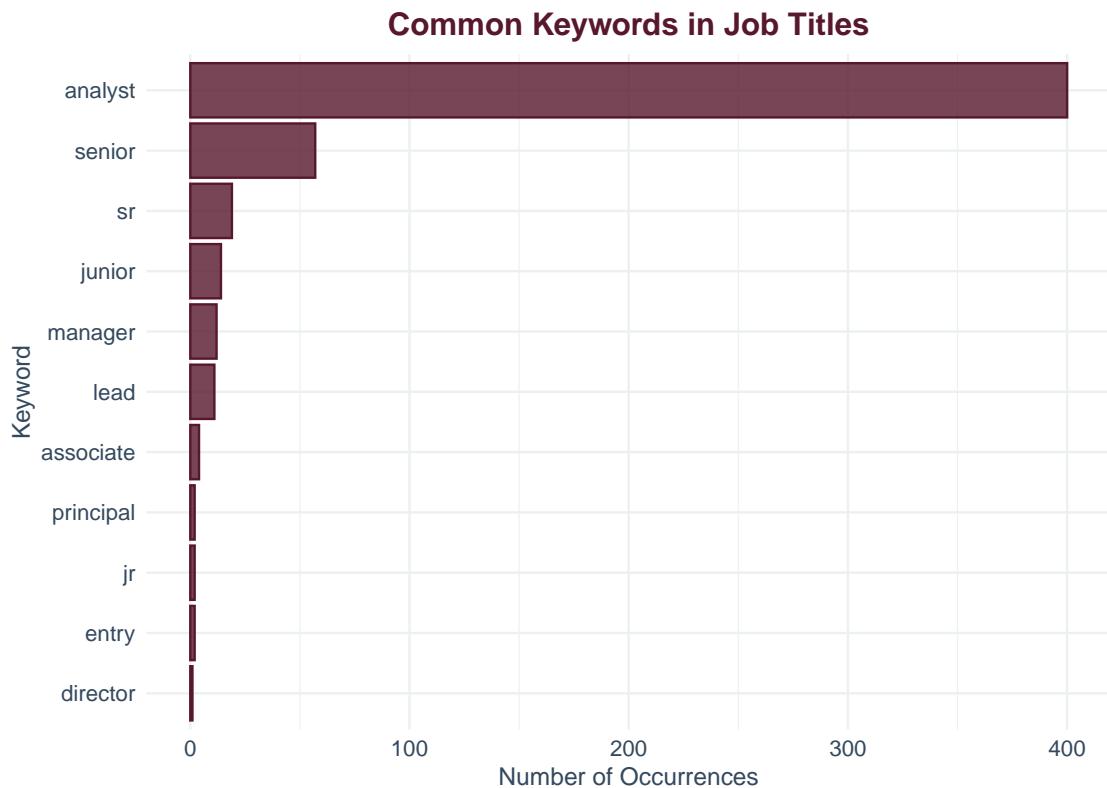
0.8.2 6.2 Company Size Distribution



Company size distribution (Figure 17) shows a relatively even spread across size categories, with companies of 51-200 employees representing the largest segment at 19.9%. This distribution indicates that data analyst opportunities exist across the full spectrum of company sizes, from startups to large enterprises. Each size category offers different advantages: smaller companies may provide more diverse responsibilities, while larger companies often offer more structured career paths and resources. See Supporting Information Table 8 for complete distribution data.

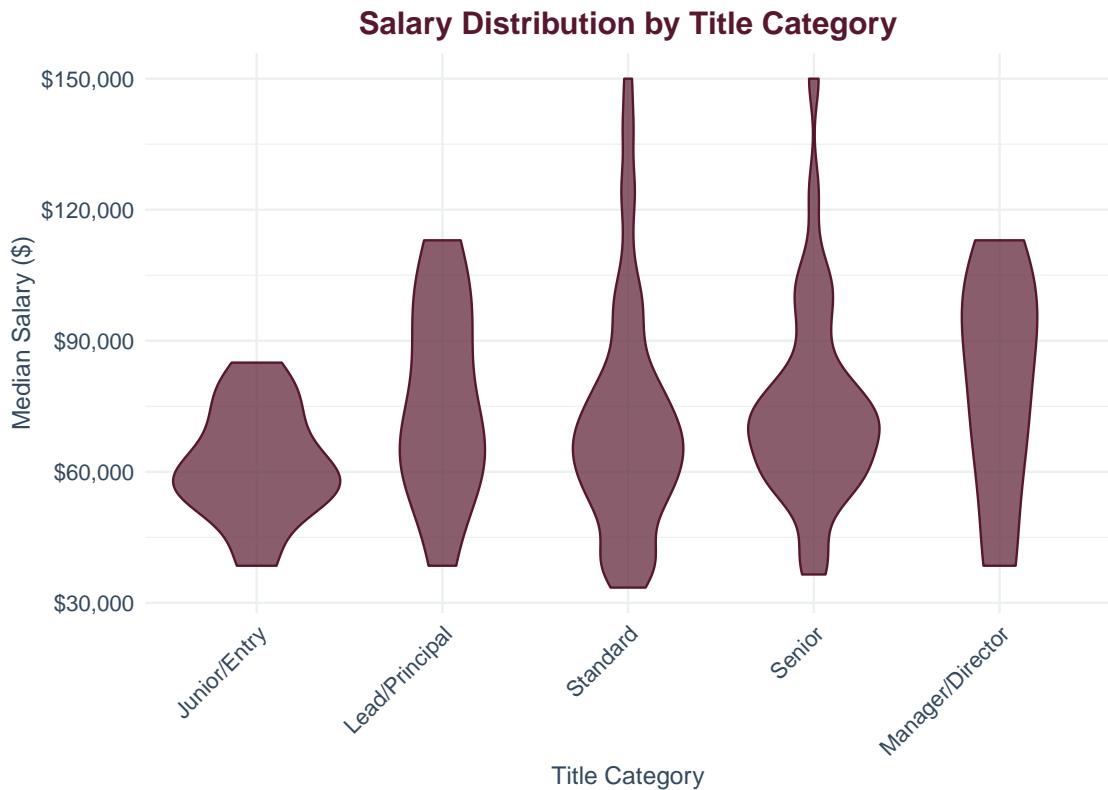
0.9 7. Job Title Variations

0.9.1 7.1 Common Job Title Patterns



Job title analysis (Figure 18) reveals that “analyst” appears in all 400 postings, as expected. “Senior” appears in 57 titles, indicating a substantial market for experienced professionals. The presence of management and leadership keywords suggests career progression opportunities within the field. This analysis helps job seekers understand common title variations and career paths.

0.9.2 7.2 Salary by Title Category



Salary analysis by title category (Figure 19) shows a clear hierarchy: Manager/Director positions command the highest median salaries, followed by Lead/Principal and Senior roles. This progression reflects increasing responsibility and expertise requirements. The substantial variation within each category, however, indicates that title alone doesn't determine compensation—location, industry, and company characteristics remain important factors. Complete title category statistics are in Supporting Information Table 9.

0.10 Key Findings

- Geographic Concentration:** California dominates the market with 110 postings and offers the highest average salary among states with significant job counts. The geographic analysis (Maps 1-5) reveals clear regional patterns in job availability, compensation, experience requirements, and skill demands.
- Experience-Salary Relationship:** A weak positive correlation ($r = 0.06$) between years of experience and salary indicates that location, industry, and technical skills significantly influence compensation beyond experience alone.
- Technical Skills Premium:** Positions requiring both Python and R, or Python alone, show higher median salaries, though Neither remains the most common requirement (63.7% of postings).
- Industry Diversity:** IT Services leads in job volume, but opportunities span diverse industries from finance to healthcare, each with different compensation patterns and requirements.
- Company Size Impact:** Opportunities exist across all company sizes, with different advantages at each level—from startup agility to enterprise resources.

0.11 Interpretation

The analysis reveals a complex, multi-dimensional job market characterized by significant variation across geographic, industry, and skill dimensions. The findings provide actionable insights for multiple stakeholders:

For Job Seekers: - Geographic strategy: California offers the highest concentration of opportunities and competitive salaries, but cost of living must be considered - Experience value: The weak correlation between experience and salary suggests that skills, location, and industry choice can compensate for less experience - Technical skills: Positions requiring Python or both Python and R show higher median salaries, indicating investment in these skills can yield returns - Industry selection: Investment banking and certain technology sectors offer premium salaries, while other industries may offer different advantages

For Employers: - Competitive positioning varies by location: Salary expectations differ substantially by state, requiring location-specific compensation strategies - Experience requirements show regional patterns: Some markets demand more experienced candidates, while others offer entry-level opportunities - Technical skill demands are evolving: The dominance of Python and the premium for multi-language proficiency suggests shifting skill requirements - Company size influences market position: Different size categories compete in distinct ways, with startups and large enterprises offering different value propositions

For Educational Institutions: - Curriculum alignment: The strong demand for Python and the geographic clustering of opportunities suggest focusing on relevant technical skills and potentially locating programs in high-opportunity regions - Experience gap: The prevalence of mid-level requirements (3-5 years) suggests a need for programs that bridge academic training and practical experience

For Policymakers: - Workforce development: Geographic clustering indicates potential for regional workforce development initiatives - Economic development: The concentration of high-paying positions in certain states suggests opportunities for economic development through supporting data analytics ecosystems

0.12 Reflection

This analysis provides valuable insights into the data analyst job market, but several important considerations and limitations should be acknowledged:

Methodological Considerations: The analysis relies on job posting data, which represents advertised positions rather than filled positions. This may introduce bias toward positions that are harder to fill or companies with more aggressive hiring strategies. Additionally, salary estimates are median values from postings, which may differ from actual negotiated salaries.

Data Limitations: The dataset contains 400 postings, representing a sample of the broader market. Geographic coverage may not be uniform, and certain industries or company types may be over- or under-represented. The “Neither” category in data languages (63.7% of postings) suggests that many positions may have flexible or unspecified technical requirements.

Market Dynamics: The job market is dynamic, and the patterns observed in this analysis represent a snapshot in time. Factors such as economic conditions, technological changes, and industry evolution will continue to shape the market. The weak correlation between experience and salary may reflect market maturity, where demand for data analysts has grown faster than the supply of experienced professionals, creating opportunities at all levels.

Practical Implications: The geographic clustering observed suggests that remote work policies could significantly impact the market by decoupling location from opportunity. The variation in experience requirements by region may reflect different market maturity levels or industry compositions. The premium for technical skills, particularly Python, suggests that continuous skill development remains important for career advancement.

Future Research Directions: This analysis could be extended by examining temporal trends, comparing advertised versus actual salaries, analyzing job posting language for skill requirements beyond data languages, and investigating the relationship between company characteristics and retention rates. Additionally, qualitative analysis of job descriptions could reveal soft skills and domain expertise requirements not captured in this quantitative analysis.

0.13 Conclusion

This analysis reveals a dynamic and diverse data analyst job market with significant geographic, industry, and skill-based variations. The five geographic maps illustrate how location influences job availability, compensation, experience requirements, industry focus, and technical skill demands. Understanding these patterns helps job seekers target opportunities effectively and enables employers to understand competitive positioning.

The key takeaway is that the data analyst job market varies substantially by geography, industry, and required skills. Success requires understanding these variations and strategically positioning accordingly. For job seekers, this means considering location, industry, and skill development holistically. For employers, it means developing location- and industry-specific strategies for attracting and retaining talent. For educators and policymakers, it means understanding regional and industry-specific needs to develop relevant programs and support workforce development initiatives.

0.14 Supporting Information

0.14.1 Table 1: Salary Statistics by Experience Level

Table 3: Salary Statistics by Experience Level

Experience Level	Count	Mean Salary	Median Salary	Min Salary	Max Salary
Senior (6-8 years)	30	79417	71000	71000	71000
Mid-Level (3-5 years)	153	72324	68000	68000	68000
Not Specified	88	71062	68000	68000	68000
Junior (1-2 years)	114	70118	63250	63250	63250
Entry Level (0)	4	68250	64750	64750	64750
Expert (9+ years)	11	68136	68000	68000	68000

0.14.2 Table 2: Salary Statistics by Company Size

Table 4: Salary Statistics by Company Size

Company Size	Count	Mean Salary	Median Salary
1001 to 5000 employees	60	67033	64500
501 to 1000 employees	41	69549	66000
51 to 200 employees	72	72208	68000
5001 to 10000 employees	21	72333	71500
10000+ employees	61	72410	68000
201 to 500 employees	48	73406	66250
1 to 50 employees	58	74198	70500

0.14.3 Table 3: Top Industries by Job Postings

Table 5: Top 15 Industries by Job Postings

Industry	Job Count	Mean Salary	Median Salary
IT Services	62	72065	66000
Staffing & Outsourcing	58	66784	68000
Computer Hardware & Software	24	76208	72000

Industry	Job Count	Mean Salary	Median Salary
Consulting	17	63000	59500
Health Care Services & Hospitals	17	78882	61500
Investment Banking & Asset Management	14	76321	70750
Advertising & Marketing	13	84308	79500
Accounting	10	73900	70750
Banks & Credit Unions	9	73000	73500
Internet	9	68833	70000
Insurance Carriers	8	73562	64750
Biotech & Pharmaceuticals	7	71071	72000
Enterprise Software & Network Solutions	7	80643	80000
Aerospace & Defense	6	71750	62000
Video Games	5	72400	78000

0.14.4 Table 5: Distribution of Experience Requirements

Table 6: Distribution of Experience Requirements

Experience Level	Count	Percentage (%)
Mid-Level (3-5 years)	153	38.2
Junior (1-2 years)	114	28.5
Not Specified	88	22.0
Senior (6-8 years)	30	7.5
Expert (9+ years)	11	2.8
Entry Level (0)	4	1.0

0.14.5 Table 6: Distribution of Data Language Requirements

Table 7: Distribution of Data Language Requirements

Data Language	Count	Percentage (%)	Mean Salary	Median Salary
Neither	255	63.7	70433	68000
Both	69	17.2	75710	68500
Python	61	15.2	74836	69000
R	15	3.8	64533	61500

0.14.6 Table 7: Salary Statistics by Ownership Type

Table 8: Salary Statistics by Ownership Type

Ownership Type	Count	Mean Salary	Median Salary
Contract	1	81000	81000
Other Organization	4	80875	69000
Company - Public	81	75821	72000
Subsidiary or Business Segment	19	75158	68000
Unknown	5	73600	72000
Company - Private	220	70314	66250
Nonprofit Organization	21	69762	59500
Government	8	67000	60750

Ownership Type	Count	Mean Salary	Median Salary
Private Practice / Firm	3	65333	63000
School / School District	2	59500	59500
College / University	2	47500	47500
Franchise	1	47500	47500
Self-employed	1	33500	33500

0.14.7 Table 8: Company Size Distribution

Table 9: Company Size Distribution

Company Size	Count	Percentage (%)
5001 to 10000 employees	21	5.8
501 to 1000 employees	41	11.4
201 to 500 employees	48	13.3
1 to 50 employees	58	16.1
1001 to 5000 employees	60	16.6
10000+ employees	61	16.9
51 to 200 employees	72	19.9

0.14.8 Table 9: Salary Statistics by Title Category

Table 10: Salary Statistics by Title Category

Title Category	Count	Mean Salary	Median Salary
Manager/Director	12	79625	83250
Lead/Principal	11	76091	68000
Senior	76	74513	72000
Standard	279	71333	68000
Junior/Entry	22	61818	59500

0.14.9 Table 10: Top States by Job Postings

Table 11: Top 15 States by Job Postings

State	Job Count	Mean Salary	Median Salary
CA	110	89732	80500
TX	67	59978	61500
NY	64	71094	69000
IL	27	80278	77500
AZ	18	69667	68500
NC	18	66056	68000
PA	18	63111	59500
NJ	17	70853	72000
WA	11	63273	51000
CO	10	73500	70000
UT	10	37350	36500
VA	10	58450	56000
OH	8	43250	40000

State	Job Count	Mean Salary	Median Salary
IN	6	47500	47500
FL	3	46667	42000

0.14.10 Table 12: Top Cities by Job Postings

Table 12: Top 15 Cities by Job Postings

City	State	Job Count	Mean Salary
New York	NY	57	69649
Chicago	IL	23	81935
San Francisco	CA	17	104029
Austin	TX	16	57594
Los Angeles	CA	15	64033
Charlotte	NC	13	66077
Jersey City	NJ	12	69000
San Antonio	TX	12	66750
San Diego	CA	12	91792
Columbus	OH	8	43250
Denver	CO	8	75375
Houston	TX	8	68375
Dallas	TX	7	52929
Philadelphia	PA	7	62571
Salt Lake City	UT	7	37714

0.14.11 Table 13: Summary Statistics

Table 13: Summary Statistics

Total Jobs	Mean Salary	Median Salary	Min Salary	Max Salary	SD Salary
400	71794	68000	68000	68000	NA