# Salary Data Findings

*DS 311  Technology in Data Analytics*

*Norman Lo*


*Written by:*

*Fatima Hararah, Kimsean Pen, Tuan Pham, Steven Stilson*

# 1. Examine the Difference in Salary between Data and Non-Data Related Subtypes

## 1.1 Salary Ranges and Differences for Data-Related Jobs

### 1.1.1: Data Science

According to the salary data set the team used to analyze our findings, we found that Data Scientists have the highest paid salary compared to other data-related jobs. Data Scientists make roughly around $108,021, 31.6% more than all data-related salaries.

### 1.1.2.: Software Engineers

Next, we learned that Software Engineers make the second highest salary for data-related jobs, making around $92,505, which is 27.1% more than most data-related salaries.

### 1.1.3: Business Analysts

Additionally, we also learned that Business Analysts make the third highest paying data-related salaries, making roughly $71,300, 20.9% more than most data-related salaries.

### 1.1.4: Data Analysts

And lastly, the team learned that data analysts make the lowest data-related salary, making around $70,030, 20.5% less than most data-related salaries.

## 1.2 Salary Ranges and Differences for Non-Data-Related Jobs

### 1.2.1: Attorney

According to the salary data set the team used to analyze our findings, we found that for non-data-related jobs, Attorneys make the highest paid salaries. We learned that attorneys make $146,413, 37% more than all non-data-related jobs.

### 1.2.2.: Management Consultant

Next, we learned that Management consultants make the second highest salary for non-data-related jobs, making around $108,251 27.4% more than most non-data-related jobs.

### 1.2.3: Assistant Professor

Additionally, we also learned that Assistant Professors make the third highest paying non-data related salaries, making roughly $94,876 24% of most non-data related salaries.

### 1.2.4.: Teacher

And lastly, the team learned that Teachers make the lowest non-data related salary, making around $46,039, 11.6% less than all non-data related salaries.

### Discussion:

Furthermore, as we can see from the data mentioned above, Data Scientists have the highest paid salary compared to all data-related jobs, and Attorneys have the highest paid salary for non-data-related jobs. Additionally, Data Analysts have the lowest paid salary for data-related jobs, and Teachers have the lowest salary for non-data-related jobs. Moreover, throughout this report, we will analyze and discuss these salaries further by looking at factors that relate to salaries by State, prevailing wages, and how education and experience level can affect salary ranges for these specific job groups.

# 2. Identify States that Paid the Highest Salary for Data and Non-Data Related Subtypes.

## 2.1 Salary Disparity Between States for Tech-Related Jobs

Our analysis revealed that for tech-centric roles such as Data Analyst, Data Scientist, Business Analyst, and Computer Scientist, California emerged as the state offering the highest salaries, especially for positions focused on data-related fields. However, when it came to Computer Science careers, New York led the way, followed closely by California.

In light of California's high compensation for data-centric roles, we decided to further investigate and identify the specific cities offering the most competitive salaries within the state. Our findings showed that cities within the Silicon Valley region, including Campbell, Mountain View, Pleasanton, and San Jose, stood out for their high salary. This aligns with the region's reputation as the "Tech Hub" of Northern California, further validating our analysis.

### 2.1.1 Companies that Paid the Highest Wage For Tech Related Jobs

#### 2.1.1.1: Data Analyst

The company with the highest average salary was Quixey, a mobile technology company specializing in functional app search, which had the highest average salary for data analysts. However, it's important to note that this company ceased operation in February of 2017.

#### 2.1.1.2: Business Analyst

For a Business Analyst position, Hara-Tech offered the highest average salary at $184,683. Intriguingly, Google, a prominent technology company, ranked only sixth in terms of the most competitive salary offerings. One might initially presume that such a leading organization would provide the highest compensation. Nevertheless, various factors, including the fierce competition in the employment landscape and the job position level, could lead to other companies offering higher pay based on the candidate's experience.

#### 2.1.1.3: Data Science

Numerous companies offer competitive salaries for data scientists but with a lower salary range compared to data analytics positions. RDIO leads the list, providing an average salary of $145,000, closely followed by Yahoo at $140,000 and Facebook at $138,000. Interestingly, these top-paying organizations primarily operate within the technology sector, despite the demand for data scientists in other fields, such as healthcare.

#### 2.1.1.4: Computer Science

Google emerges as the top-paying organization for software engineers, offering a salary of $237,450. It appears that the specific job title or role influences whether Google assumes the leading position in terms of compensation. This is a logical observation, as not all positions within a company warrant high salaries; the salary range will depend on the particular role one is pursuing.

## 2.2 Salary Disparity Between States for Non-Tech-Related Jobs

For non-tech-related jobs, the highest-paying occupations varied significantly across different states. For instance, in Florida, the top earner was an Assistant Professor, while in the District of Columbia, an Attorney held the highest-paid position. In New Jersey, Teachers earned the highest salaries, and in California, it was Management Consultants.

### 2.2.1 Companies that Paid the Highest Wage for Non-Tech-Related Jobs

#### 2.2.1.1: Assistant Professor

Predominantly, universities are the primary employers offering Assistant Professor roles. Interestingly, the University of Florida stands out, offering an exceptional salary of $500,000 for this position - a figure that might seem unexpectedly high for an Assistant Professor role. It's worth noting, however, that Assistant Professors who are postsecondary health specialist teachers at the university level earn the highest salaries compared to their peers in other subject areas, which could potentially explain this substantial paid wage.

#### 2.2.1.2: Management Consultant

Furthermore, there appears to be a limited number of companies hiring for management consultant positions. Detecon Inc. offers the highest salary at 140,092, while Seminal Financial Group provides the lowest at $51,022. Although management consultant roles do provide a competitive salary compared to tech positions, there seems to be a smaller number of available opportunities within the field.

#### 2.2.1.3: Teachers

The data suggest that teachers with the highest salaries are often employed at private or specialized institutions, such as the Japanese Children's Society (salary of 59,057) and Lumen Christi Catholic School (salary of 46,327). Conversely, both Coolidge and Riverside school districts are among the lowest-paying employers, offering a salary of 31,880. This indicates that the type of educational institution significantly influences teachers' salaries where we see more private school teachers being paid more compared to those who work for the district which is public.

#### 2.2.1.4: Attorney

Finnegan, Henderson, Farabow, Garrett & Dunner LLP offers the highest salary among the considered companies. It is surprising to find that the U.S. Regional Economic Development Authority provides the lowest compensation, despite being a government job, which might be expected to offer a more competitive salary. While it would not necessarily pay as much as a private firm, it is unexpected for it to rank at the bottom. This observation highlights that working as an attorney in a governmental role may not be as financially rewarding as working in a private attorney's office.

# 3. Compare Prevailing vs Paid Wage for Data and Non-Data Related Jobs

### 3.1: Data-related jobs

Recently, the demand for data-related jobs such as Data Analyst, Business Analyst, Data Science, and Software Engineering has increased significantly due to the growing importance of data-driven decision-making in various industries. As a result, the offer salaries for these positions have generally exceeded the prevailing wages. The average paid wage per year for a Data Analyst is $70,030, while

the average prevailing wage per year is $62,754. Similarly, the average paid wage per year for a Data Scientist is $108,021, while the average prevailing wage per year is $90,545.

The reason behind this trend is the shortage of skilled and experienced candidates in the job market. Employers are willing to pay a premium for talented data professionals who can help them leverage data to drive business insights and strategy. Moreover, the constantly changing data science and technology field requires continuous learning and development, which limits the available pool of qualified candidates.

### 3.2: Non-data related job

On the other hand, non-data-related jobs such as Assistant professors, Teachers, Management consultants, and Attorneys have higher prevailing wages compared to their offered salaries. For instance, the average prevailing wage per year for an Attorney is $106,648, while the average paid wage per year is $146,413. Similarly, the average prevailing wage per year for an Assistant Professor is $58,831, while the average paid wage per year is $94,876.

The reason for this could be the specific requirements for these positions such as advanced degrees, specialized skills, or licensing, which make it difficult for employers to find suitable candidates willing to accept lower pay. In addition, the academic and legal professions have been linked to better job security and benefits, which may impact the pay system.

### 3.3: Prevailing wage vs paid wage according to the employer's name

The comparison between prevailing wage and paid wage per year according to employer name highlights the significant differences in salaries across different companies. The data reveals that some employers pay their workers significantly more than the prevailing wage, while others pay less.

For example, the employer (Household of Sandra Sirugo & Jorge D. Jaury) pays a paid wage per year of $41,288, which is only $83.2 more than the prevailing wage per year of $41,204.8. On the other hand, 1 to 1 Marketing LLC pays a paid wage per year of $93,333.33, which is $28,423.33 higher than the prevailing wage per year of $64,910.

Overall, the differences between prevailing wages and paid wages per year suggest that certain employers may prioritize specific skills, experience, or qualifications. It could also indicate differences in abilities or skills between employers and employees. However, it is important to note that the specific factors influencing the difference in salaries may differ based on the employer, industry, location, and other factors.

## 4. Analyze Prevailing vs. Paid wages between College Majors

The data we were given was the result of a survey, filled out by 167,279 employees. Questions included prevailing wage, paid wage, and college major. This section of the study concentrated on college majors. But we found that the college major question was answered extremely vaguely. Typical answers were: “Business administration/engineering/technology” and “CIS/MIS/engineering/technology”.

So, the first task was to create categories for the college majors. If a keyword is at the beginning of the vague answers, it is ranked higher than when the keyword is in a lower position in the vague answer. So, the first answer above would receive a code Z and the second Q. We then analyzed the mean, median and mode for the prevailing wages and paid wages for each college major category.

### 4.1 Findings:

4.1.1
The first finding we found was that the highest-paying college majors are Medicine, Accounting (high because of Harvard professors), Lawyers, Marketing, Computer Science majors, Veterinary studies, electrical engineering and Finance and Business Administration.

4.1.2
The lowest was teachers, even lower than the "undeclared" college major.

4.1.3
The next thing we found was that prevailing wage numbers were WAY OFF, especially for the highest-paid college majors. So, we didn't use prevailing wage numbers anymore.

4.1.4
Modes were also way off, because often no one had the same as anyone else.

### 4.2 Compared Paid Wages for Doctorates and Non-Doctorate Required Occupations.

4.2.1
There were at least three categories of employees who earned more without PhDs than with PhDs. These college majors included accounting, lawyers and medicine and dentistry.

### 4.3 Non-data findings

4.3.1 We found that we could write adapters for a current technology, R, to read a very old technology, SQL. We could also import and export data from SQL to excel and vice versa. This solved the problem of data being walled off by non-compatible technologies.

4.3.2 We also found that we could execute scripts to break through these walls in real-time. As often as these scripts are run, data could be passed from one technology to another. We reduced the latency to a few seconds, much faster than the hours-old or days-old data shown on dashboards, which is common in the industry.