

US

# DATA & AI SALARY GUIDE 2023

The definite source of salary information  
for the **US** data market



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## Welcome to the 12th annual salary guide, presented by **Harnham and Rockborne.**

Using data from a global survey of thousands of data professionals, this guide provides an in-depth overview of the data landscape across the US.

Inside, you'll find an overview of average salaries, an analysis of the latest hiring, workplace and technological trends, as well as expert commentary on how we can continue to drive progress in the world of data, artificial intelligence (AI), and machine learning (ML).



# SALARY GUIDE INTRODUCTION

## A WORD FROM HARNHAM'S CEO

**It is my pleasure to introduce you to the latest edition of our annual US salary guide.**

I want to thank every respondent who took the time to take part in our survey. Your responses have provided invaluable insights and, alongside an analysis of our placements and roles over the past year and a review of job boards worldwide, have offered a clear view of the industry in 2023.

This year's survey paints a picture of perseverance and tenacity in response to the ongoing economic storms that have dominated the past year. The data market, as always, owes its success to the forward-thinkers and innovators that make up our exciting, evolving industry, and it is this which will future-proof its continued progression.

Our findings are reflective of the global trend of salaries returning to less inflated levels, with many businesses in various sectors forced to be more conservative with their hiring and financial strategies to avoid layoffs and to steady the market.

That being said, bonuses are on the rise and continue to be a highly valued by candidates.

As employees and employers face rises in the cost of living, there is need of a balancing act between expectation and reality to ensure that businesses balance profits whilst remaining competitive when it comes to attracting the best talent. Candidates' top reason for leaving a role is due to the salary not being sufficiently competitive, so organizations must be mindful of this if they wish to retain their most valued talent.

In the post-pandemic landscape, remote and hybrid work remain a consistent theme. However, the value of face-to-face working and a collaborative culture are increasingly being recognized by businesses and candidates alike, who are embracing a hybrid working arrangement above being fully remote.

# SALARY GUIDE INTRODUCTION

## A WORD FROM HARNHAM'S CEO

AI continues to surge, without any sign of slowing down. We will be keeping a close eye on this sector as it evolves and renders more opportunities.

When it comes to gender diversity, we have seen a slight drop in female professionals and believe this is reflective of the current market and the number of layoffs during the last 12 months. We hope that we can play a part in helping the industry to take the strides that we know it is capable of in this area moving forwards. This is something that we will examine in more detail in our '2023 Diversity In Data Report', due to launch later this year.

I hope you find this year's guide useful and informative. As ever, if you have any feedback, suggestions or questions about the guide, then please email [research@harnham.com](mailto:research@harnham.com).

**- Dave Farmer / CEO of Harnham**



### ABOUT **DAVE FARMER**

**As one of the founding partners of Harnham, Dave has become a recognized figure in data recruitment over the past 17 years.**

Having helped hundreds of data professionals develop their careers, Dave is now leading and growing Harnham's presence throughout the UK, Europe and US.

# ABOUT THIS GUIDE

**For our 2023 Salary Guide, we have compiled data from:**

- | An independent survey with more than 165,000 data points collected from over 6,500 data professionals globally.
- | Analysis of all placements and vacancies by Harnham US in the last 12 months.
- | Data from roles recruited by Harnham's US branch.
- | Analysis of data roles advertised online.

\* Please note that in some instances throughout the guide, percentages may not add up to 100% due to rounding.

**Salaries for each role have been broken down by experience level and respondents were asked to match themselves against one of the following:**

- | Entry Level (Starting out their data career in an entry-level role, perhaps having achieved their first promotion).\*
- | Mid-Level (Experienced hands-on position, remaining in a technical capacity and possibly leading projects).
- | Technical Lead or Manager Level (Within a role that has moved from technical work and into a management position, or having a senior technical hands-on position).
- | Head of / Director Level (Leading business units comprising of one or more technical teams within one vertical/specialism).
- | VP and above (Leading business units comprising of one or more technical teams)

\* Some salaries are not included for contract roles due to the base level of experience required.

# ABOUT THIS GUIDE

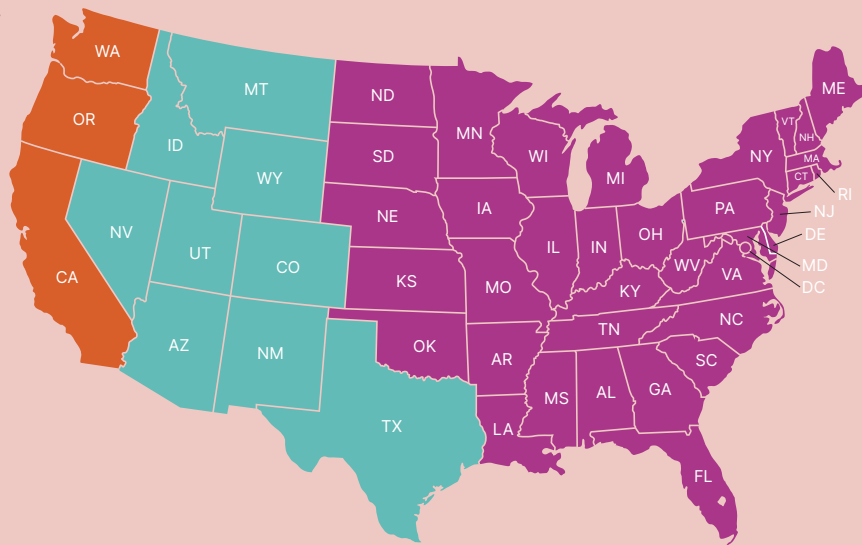
**Salaries have been further broken down into regions. For the purposes of this research, we've simplified our regional data into three core regions:**

■ West (served by our San Francisco office)

■ Southwest & Midwest\*  
(served by our Phoenix office)

■ East (served by our New York office)

\* This region is referred to as "Mid" throughout the guide. This is an emerging market for Harnham, and every effort has been undertaken to gather data for the region, however where we have considered the data unreliable we have removed it.



# ABOUT THE ANALYSIS

**The analysis for this report was done by Rockborne, a Harnham Group company. Below, Rockborne's CEO, Waseem Ali, discusses the process for this:**

Harnham's most recent salary survey of the industry received over 6,500 responses from data professionals across 34 countries across the UK, US and Canada, and Europe. To produce effective and valuable insights from these responses, the data required cleaning, enhancement, and exploration across Excel, Power BI, and Python.

Standardization is a key outcome of data cleaning, by identifying and removing outlier values and setting upper and lower limits for data distributions, we can create a more informative view of the data. As an example, upper and lower bounds were implemented on salary in each region, as values may be unreasonably low (for instance if someone put a monthly as opposed to yearly salary) or unreasonably high (possible if someone accidentally added an extra zero when answering).

For the purposes of this study, data outside of 'male' and 'female' gender classifications were not considered due to the sparse number of responses, although we hope this changes in the coming years. However, data exploring representation of non-binary and gender fluid persons in the industry will be analyzed in Harnham's 'Diversity In Data' report due out later this year, as we recognize that this is an important area of discussion and should not be overlooked.

As part of expanding the utility of the salary guide, Harnham is developing an online salary checker, allowing users to compare their salary across levels of seniority as well as geographic location, empowering them to make informed career decisions and stay abreast of developing trends in their industry and discipline. Salary checker available at:

[harnham.com/data-ai-analytics-salary-guides-2023](https://harnham.com/data-ai-analytics-salary-guides-2023)

**- Waseem Ali / CEO of Rockborne**



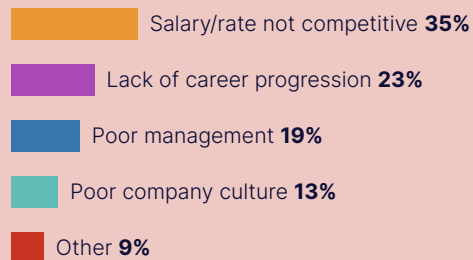
ABOUT  
**ROCKBORNE**

Rockborne's mission is to diversify the data space. They tackle this in two ways; by connecting companies to diverse, Rockborne trained data consultants. And by providing data training to organizations that are looking to upskill their existing teams. Learn more at [rockborne.com](https://rockborne.com)

# INDUSTRY

## KEY FINDINGS

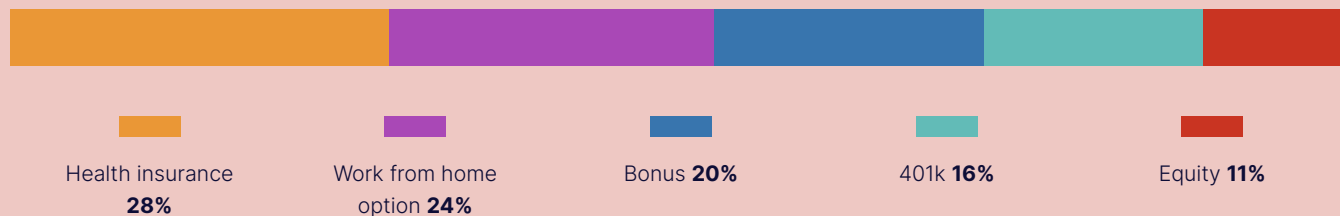
### TOP FIVE REASONS FOR LEAVING A ROLE



### TOP FIVE TECHNOLOGIES USED BY PROFESSIONALS IN US DATA & ANALYTICS MARKET

- |           |            |        |
|-----------|------------|--------|
| 1. Python | 3. Tableau | 5. AWS |
| 2. SQL    | 4. Excel   |        |

### THE MOST DESIRABLE BENEFITS



# INDUSTRY

## KEY FINDINGS

40%

### FEEL AS OR MORE SECURE

In their role than in 2022,  
down from 92% last year

40%

### WOULD LEAVE THEIR ROLE

If the right opportunity came up,  
down from 70%

22%

### AVERAGE SALARY INCREASE SOUGHT

When applying to a new role  
over the last year. Actual  
achieved was 8% on average

3 ¼ YEARS

### AVERAGE LENGTH OF TIME IN A ROLE

24%

### NUMBER OF FEMALE PROFESSIONALS

A slight drop from 26% last year

48%

### WOULD PREFER TO WORK FULLY REMOTE

20%

### AVERAGE BONUS

With 22% receiving a larger  
bonus in 2023

25%

### RECEIVED A COUNTER OFFER

Of these 15% accepted the  
counter offer

# REMOTE & HYBRID WORKING

**Like last year, most businesses are currently working on a hybrid basis, with only 3% of employees returning to the office full-time post-COVID.**

Because of this, the average data professional still spends less than three days in the office per week, a figure that's consistent across all seniority levels.

Flexible working has become the new normal. So much so, that many employees now expect a certain degree of flexibility when it comes to their working conditions.

And while most employers are happy to accommodate this, many organizations are now establishing formalized agreements with their employees to ensure that people are committing to a set number of days in the office.

In fact, this year has seen a significant influx of formalized agreements, with 17% of employees claiming they have a remote or hybrid work agreement explicitly outlined in their contract, compared to just 10% who did last year. We can expect

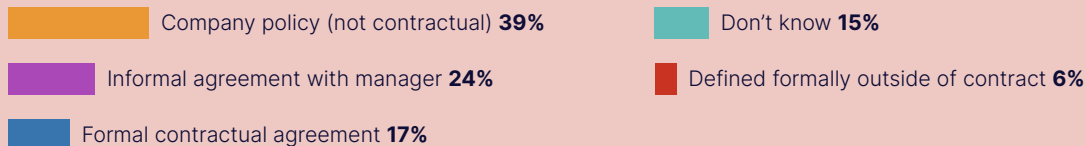
this figure to grow in the coming years, as jobs that require employees to be fully on-site become a thing of the past.

Unsurprisingly, remote working processes are impacting how the workforce is distributed geographically by opening the talent pool to those located further afield. This year, 53% of respondents that work fully remote for a US company are based outside of the country.

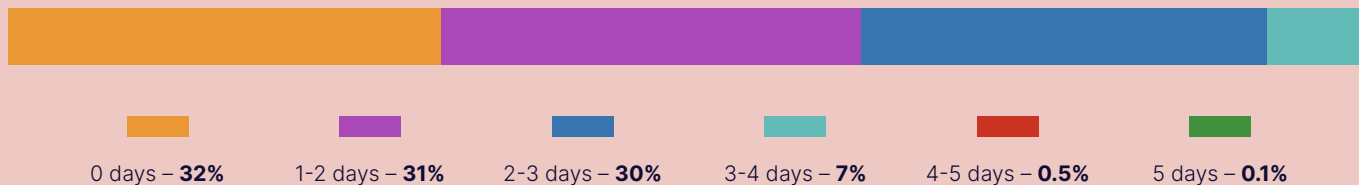
# REMOTE & HYBRID

## KEY FINDINGS

### HOW HYBRID OR REMOTE WORKING AGREEMENT IS DEFINED IN EMPLOYMENT CONTRACTS



### AVERAGE NUMBER OF DAYS SPENT IN THE OFFICE PER WEEK



# REMOTE & HYBRID

## KEY FINDINGS

50%

OF SURVEY RESPONDENTS  
WORK FULLY REMOTE

53%

OF RESPONDENTS WHO WORK  
FULLY REMOTE ARE BASED  
OUTSIDE OF THE US

48%

WOULD PREFER TO  
WORK FULLY REMOTELY

46%

WOULD PREFER  
HYBRID WORKING

10%

NOT PLANNING TO  
RETURN TO THE OFFICE

3%

HAVE RETURNED TO  
THE OFFICE FULL-TIME  
POST-COVID

# AI & EMERGING TECHNOLOGY

**Artificial intelligence (AI) is of course continuing to make a splash in the data market, generating new roles and influencing the skillsets most in demand.** For example, we are witnessing an increased need for candidates who have been working in areas of conversational natural language processing (NLP) or prompt engineering. Development in areas such as generative AI both within language and image/video data, are also stimulating the creation of new jobs and larger capabilities within established and emerging data teams.

Across our clients we are seeing signs that some are beginning to utilize elements of AI. In machine learning (ML) we are seeing product-based generative AI roles emerge, rather than strictly research and development (R&D).

As to addressing the fear that AI will remove jobs in the market, from our experience AI is just pushing back hiring for companies for a couple of months as it can provide largely short-term solutions. But until businesses have AI models that are made specifically for their products or services, they will not be replacing full-time employees.

Data privacy and automation are also likely to become hugely impactful on the market. Having ethically sourced data that does not infringe on privacy laws will become a huge priority over the next couple of years as legislation catches up to market trends. Companies will grow and emerge strictly around privacy laws and data protection. Automation is also on the rise, with a boom in the MLOps and ML field as a whole. Companies that automate most effectively and have a commitment to data where scale is at the forefront of a data team, rather than ROI, have been the most successful.

What makes the data industry so exciting is that it is constantly evolving. With a revolving door of new technologies emerging, what is trending today won't be the same in a year's time. The companies that can adapt the fastest, most successfully, and scale reasonably, are likely to reap the greatest benefits.



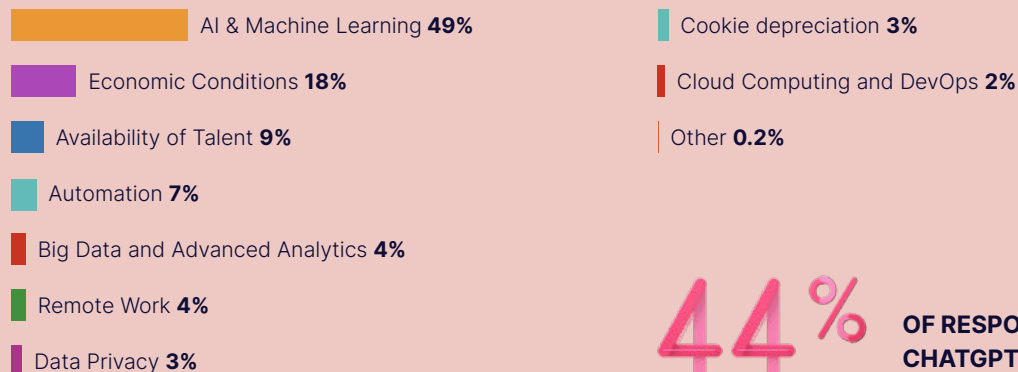
**SAM AGRE**

Head of Machine Learning

# AI & EMERGING TECH

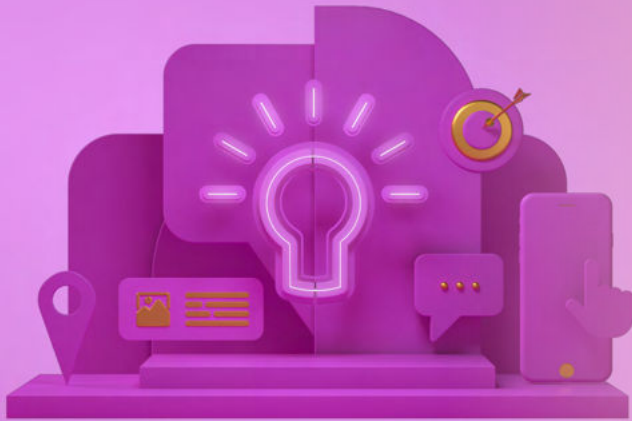
## KEY FINDINGS

### WHICH WILL HAVE THE BIGGEST IMPACT ON DATA & ANALYTICS IN 2023?



44%

OF RESPONDENTS HAVE USED  
CHATGPT AT WORK



# ADVANCED ANALYTICS ROLES

US

# ADVANCED ANALYTICS ROLES

US

**There has been an influx of organizations looking to scale their respective data functions in a variety of different industries in comparison to last year.** For example, we've seen several positions come through on the advanced analytics & insights (AA&I) side from utilities, education, non-profits, sustainability and shipping/logistics.

Companies in these industries are now realizing how to leverage data within their organization to understand best processes, optimize company performance, and subsequently make important business decisions.

## WHAT WE'RE SEEING IN THE ADVANCED ANALYTICS MARKET

Candidates in the AA&I space are starting to lean toward some form of 'in-person' working practices when exploring potential opportunities. This would typically take the form of two days working from home and three days in office. They see the value in having facetime with their colleagues and embedding themselves in a company's organizational culture.

This is especially true when it comes to leadership roles; analytics leaders want the opportunity to collaborate with their team in-person,

upskill their respective direct reports, and effectively train new starters from a non-remote capacity.

Hiring managers are keying in on individuals who can provide thought leadership and strategy across different business units. Also, the term "entrepreneurial spirit" gets thrown around quite a lot by clients, as stakeholders are keen on analytics professionals who can drive innovation and take on complex challenges from both an individual contributor and leadership perspective.

Pay rises are not meeting expectations, as this past year has seen changes to supply/demand for analytics labor – because there was such a boom in 2021-2022 regarding organizations looking to scale from a data perspective and hence trying to stay competitive with the market compensation-wise, companies are being careful to evaluate long term trends so that they do not need to downsize.



**GREFFEN GEORGE**

Manager,  
Advanced Analytics & Digital

# ADVANCED ANALYTICS ROLES

## SALARY AND DAY RATE BREAKDOWNS

### PERMANENT – AVERAGE ANNUAL SALARY

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Annual Base Salary - \$USD   East • West • Mid					
Campaign & CRM	\$80k   \$72k   \$100k	\$140k   \$123k   n/a	\$164k   \$180k   \$150k	\$188k   \$239k   n/a	\$217k   \$275k   \$350k
Consumer Insight	\$76k   \$74k   \$85k	\$111k   \$125k   \$100k	\$149k   \$176k   \$150k	\$190k   \$197k   n/a	\$234k   \$235k   n/a
Data Science – Customer Analytics	\$124k   \$95k   \$100k	\$155k   \$137k   \$124k	\$179k   \$199k   \$150k	\$211k   \$211k   n/a	\$250k   \$250k   \$250k
Marketing Analytics	\$110k   \$85k   \$100k	\$138k   \$140k   n/a	\$162k   \$173k   \$150k	\$203k   \$210k   \$170k	\$248k   \$280k   n/a
Predictive Analytics	\$126k   \$91k   \$100k	\$155k   \$140k   \$120k	\$181k   \$170k   \$150k	\$210k   \$214k   \$170k	\$250k   \$264k   n/a
Product Analytics	\$115k   \$85k   \$108k	\$148k   \$140k   \$114k	\$185k   \$192k   \$150k	\$209k   \$215k   \$193k	\$239k   \$243k   \$233k
Strategic Analytics	\$96k   \$88k   \$105k	\$134k   \$142k   \$125k	\$164k   \$170k   \$150k	\$191k   \$188k   \$173k	\$222k   \$277k   \$196k

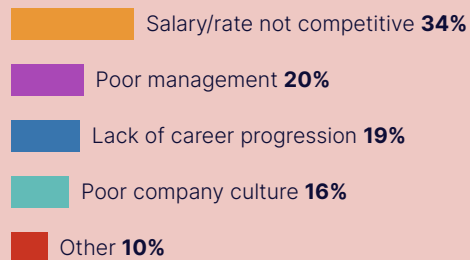
### CONTRACT – AVERAGE DAY RATES

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Hourly Contract Rate - \$USD   East • West					
Campaign & CRM	\$45   n/a	\$65   \$60	\$85   \$75	\$105   \$150	\$120   n/a
Consumer Insight	\$55   n/a	\$80   \$55	\$100   \$70	\$115   \$150	\$135   n/a
Data Science – Customer Analytics	\$45   \$45	\$65   \$65	\$80   \$90	\$100   n/a	\$115   n/a
Marketing Analytics	\$50   \$45	\$65   \$60	\$85   \$75	\$100   n/a	\$125   n/a
Predictive Analytics	\$55   \$45	\$65   \$60	\$90   \$75	\$110   n/a	\$130   n/a
Product Analytics	\$45   \$45	\$65   \$65	\$85   \$80	\$105   n/a	\$125   n/a
Strategic Analytics	\$45   \$45	\$60   \$60	\$75   \$75	\$95   n/a	\$115   \$145

# ADVANCED ANALYTICS ROLES

## KEY FINDINGS

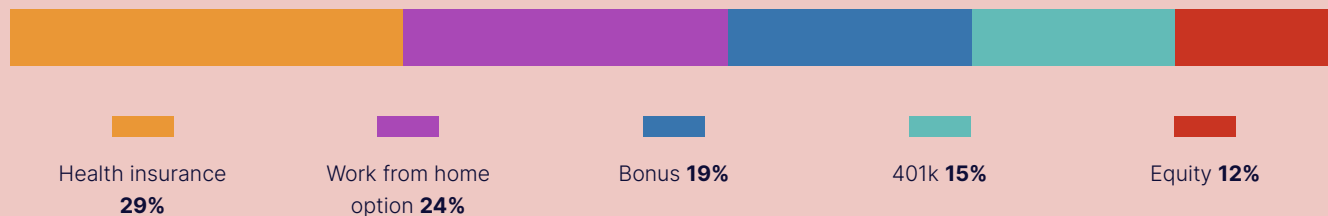
### TOP FIVE REASONS FOR LEAVING A ROLE



### TOP FIVE TECHNOLOGIES USED BY PROFESSIONALS IN ADVANCED ANALYTICS JOBS

- |           |            |      |
|-----------|------------|------|
| 1. SQL    | 3. Tableau | 5. R |
| 2. Python | 4. Excel   |      |

### THE MOST DESIRABLE BENEFITS



# ADVANCED ANALYTICS ROLES

## KEY FINDINGS

68%

### FEEL AS OR MORE SECURE

In their role than in 2022, down from 92% last year

66%

### WOULD LEAVE THEIR ROLE

If the right opportunity came up, down from 72% the previous year

22%

### AVERAGE SALARY INCREASE SOUGHT

When applying to a new role over the last year. Actual achieved was 9% on average

3 <sup>1</sup>/<sub>4</sub> YEARS

### AVERAGE LENGTH OF TIME IN A ROLE

34%

### NUMBER OF FEMALE PROFESSIONALS

Up from 26% last year

43%

### WOULD PREFER TO WORK FULLY REMOTE



# COMPUTER VISION ROLES

US

# COMPUTER VISION ROLES

US

**The computer vision (CV) market has remained buoyant, with businesses across multiple industries recognizing the value that the CV field can bring to their offering.**

There has been significant growth in safety and injury prevention approaches particularly within the oil and gas industries as well as the sports sector this year, where CV is playing an increasingly integral role. As predicted, there has been a global explosion in robotics, audiovisual (AV) services and artificial intelligence (AI), a trend which isn't showing any signs of slowing down.

There is a plethora of potential developments on the horizon for the coming years, including conversions from 2D to 3D and the embracing of generative AI. When it comes to the technologies that will increase in demand, these are likely to include: SLAM, Lidar, C++, Python, ROS (Robotics Operating System) and OpenCV.

While it's disappointing that the number of female professionals in the sector decreased from last year, it's positive to see the gender pay gap moving in the opposite direction, with women being paid on average 15% more than men – the highest in the industry. A statistic which we hope will help to improve the gender balance of businesses' talent pipelines.

## WHAT WE'RE SEEING IN THE COMPUTER VISION MARKET

Although there is a decrease in how secure respondents feel in their roles from last year, this is likely a reflection of the overall market and not necessarily specific to CV.

Additionally, CV professionals are clearly feeling largely settled, spending the longest average length of time in a role compared with the wider industry, and are the least likely to leave their role for a different role.

When it comes to working practices, respondents are clearly favoring a more flexible/hybrid arrangement. Having the option to work from home is rated as the second most desired benefit but only 21% of respondents would like to work fully remotely, down from 34% the previous year and the lowest in the industry.

This shift away from fully remote work isn't surprising when considering the nature of CV roles, with many requiring hands-on work with hardware (cameras, robots, cars etc.). Candidates want to be working with new, cutting-edge technology, which for most CV positions will require some in person contact.



**KYLE ANZALONE**  
Senior Manager

# COMPUTER VISION US

## SALARY AND DAY RATE BREAKDOWNS

### PERMANENT – AVERAGE ANNUAL SALARY

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Annual Base Salary - \$USD   East • West • Mid					
Computer Vision (Software Engineering)	\$122k   \$125k   \$100k	\$148k   \$160k   \$130k	\$185k   \$202k   \$170k	\$233k   \$259k   \$200k	\$280k   \$302k   n/a
Perception Engineering	\$128k   \$130k   n/a	\$152k   \$157k   \$135k	\$189k   \$208k   \$168k	n/a   \$210k   \$190k	n/a   n/a   n/a
Software Engineering - Autonomy	\$133k   \$130k   n/a	\$155k   \$130k   \$130k	\$187k   \$190k   n/a	\$215k   \$245k   n/a	\$290k   \$289k   n/a
Software Engineering – Medical Imaging	\$115k   \$112k   n/a	\$136k   \$138k   n/a	\$171k   \$196k   n/a	\$217k   \$228k   n/a	\$260k   \$275k   n/a
Software Engineering - Robotics	\$108k   \$108k   n/a	\$145k   \$162k   \$150k	\$180k   \$210k   \$170k	\$208k   \$245k   n/a	\$280k   \$300k   \$300k

### CONTRACT – AVERAGE DAY RATES

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Hourly Contract Rate - \$USD   East					
Computer Vision (Software Engineering)	\$60	\$80	\$95	\$135	n/a
Perception Engineering	\$60	\$80	\$95	\$140	n/a
Software Engineering - Autonomy	\$65	\$75	\$95	\$120	n/a
Software Engineering – Medical Imaging	\$60	\$70	\$95	\$120	n/a
Software Engineering - Robotics	\$55	\$75	\$95	\$115	n/a

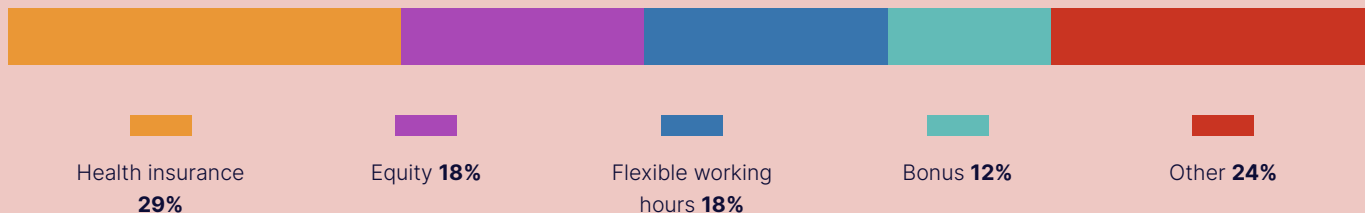
# COMPUTER VISION ROLES

## KEY FINDINGS

### TOP FIVE REASONS FOR LEAVING A ROLE



### THE MOST DESIRABLE BENEFITS



# COMPUTER VISION ROLES

## KEY FINDINGS

79%

### FEEL AS OR MORE SECURE

In their role than in 2022, down from 90% the previous year

50%

### WOULD LEAVE THEIR ROLE

If the right opportunity came up, the least likely in the industry

15%

### AVERAGE SALARY INCREASE SOUGHT

When applying to a new role over the last year. Actual achieved was 3% on average – the lowest in the industry

4½ YEARS

### AVERAGE LENGTH OF TIME IN A ROLE

The longest in the industry

7%

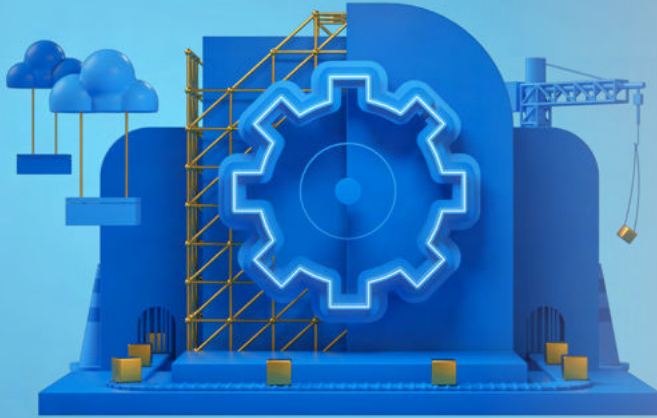
### NUMBER OF FEMALE PROFESSIONALS

Down from 21% last year

58%

### AVERAGE BONUS

The largest in the industry and with 29% receiving a larger bonus than the previous year



# DATA & TECH ROLES

US

# DATA & TECH ROLES

US

**There has been considerable uncertainty in the data and tech market.** Over the last 12 months, several larger companies have made significant redundancies, primarily the highest earners and youngest members of organizations. As a result, people are feeling less secure in their roles compared to last year.

On the other hand, bonuses are on the rise, likely in an effort to retain and reward remaining staff and provide them with some reassurance.

AI and large language model (LLM) projects will experience exponential growth over the coming year, which will inevitably create new jobs and eradicate others but it is a developing area that we will be keeping a close eye on as it evolves.

Engineering salaries have been increasing rapidly over the last three to four years but the market conditions have removed the power for candidates to negotiate, with currently more talent than available jobs.

## WHAT WE'RE SEEING IN THE DATA & TECH MARKET

Manufacturing, health and AI are areas that have seen significant growth this year in the data and tech market.

With a vast pool of data and tech engineers, strong soft skills are particularly important for candidates, to give them a competitive edge. In addition to the technical skills, hiring managers are especially looking for engineers who are able to clearly articulate and communicate data to all stakeholders, in a way that those across the wider business can understand the complex problems that data is solving.

We have seen a decrease in female candidates in the last year, which has most likely been a result of extensive redundancies and wider economic conditions. Unfortunately, with the economic downturn, diversity and inclusion has appeared to be less front of mind in the market over the last year. We hope to see these figures improve as the market begins to regain stability.



**CALUM REID**

Senior Manager,  
Data & Technology

# DATA & TECH

## SALARY AND DAY RATE BREAKDOWNS

### PERMANENT – AVERAGE ANNUAL SALARY

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Annual Base Salary - \$USD   East • West • Mid					
Analytics Engineering	\$118k   \$80k   \$92k	\$158k   \$160k   \$145k	\$182k   \$166k   \$132k	\$194k   \$210k   \$186k	\$229k   \$250k   \$245k
Business Intelligence	\$96k   \$80k   \$85k	\$121k   \$140k   \$104k	\$160k   \$160k   \$125k	\$176k   \$210k   \$170k	\$216k   \$230k   \$216k
Data Architecture	\$135k   n/a   n/a	\$180k   \$150k   n/a	\$193k   \$210k   \$180k	\$240k   \$240k   \$240k	\$275k   \$275k   n/a
Data Engineering	\$133k   \$120k   \$100k	\$176k   \$150k   \$106k	\$208k   \$200k   \$143k	\$248k   \$225k   \$201k	\$290k   \$250k   n/a
Data Governance	\$125k   n/a   n/a	\$155k   n/a   \$135k	\$188k   \$180k   \$155k	\$225k   \$225k   \$175k	\$276k   \$300k   n/a
DevOps/Infrastructure	\$100k   \$105k   \$110k	\$125k   \$150k   \$130k	\$158k   \$175k   \$160k	\$188k   \$200k   \$220k	\$222k   \$225k   n/a
Software Engineering	\$128k   \$110k   \$105k	\$148k   \$170k   \$140k	\$194k   \$194k   \$170k	\$222k   \$232k   \$190k	\$260k   \$298k   \$220k

### CONTRACT – AVERAGE DAY RATES

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Hourly Contract Rate - \$USD   East • West					
Analytics Engineering	n/a   n/a	\$75   \$65	\$80   \$90	\$95   n/a	n/a   n/a
Business Intelligence	n/a   \$45	\$65   \$65	\$80   \$125	\$95   n/a	n/a   n/a
Data Architecture	n/a   n/a	\$100   n/a	\$120   \$140	\$135   n/a	\$150   \$250
Data Engineering	n/a   n/a	\$80   \$75	\$95   \$100	\$110   n/a	n/a   n/a
Data Governance	n/a   n/a	\$70   n/a	\$80   \$80	\$90   n/a	n/a   \$200
DevOps/Infrastructure	n/a   n/a	\$65   \$65	\$85   \$85	\$95   n/a	n/a   n/a
Software Engineering	n/a   n/a	\$75   \$70	\$85   \$120	\$100   n/a	n/a   n/a

# DATA & TECH ROLES

## KEY FINDINGS

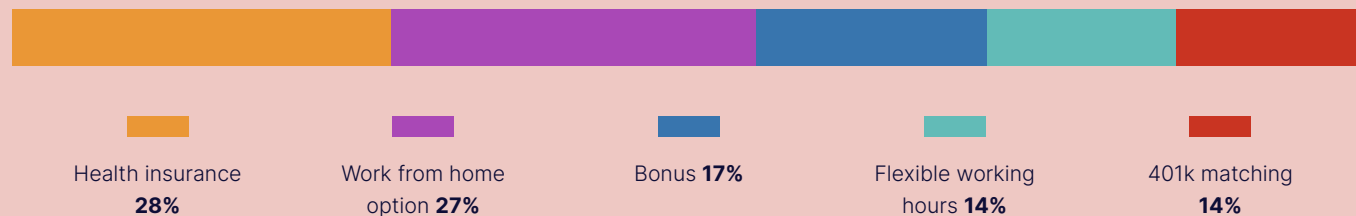
### TOP FIVE REASONS FOR LEAVING A ROLE



### TOP FIVE TECHNOLOGIES USED BY PROFESSIONALS IN DATA & TECH JOBS

- |           |            |          |
|-----------|------------|----------|
| 1. Python | 3. Tableau | 5. Excel |
| 2. SQL    | 4. AWS     |          |

### THE MOST DESIRABLE BENEFITS



# DATA & TECH ROLES

## KEY FINDINGS

70%

### FEEL AS OR MORE SECURE

In their role than in 2022, down from 93% the previous year

58%

### WOULD LEAVE THEIR ROLE

If the right opportunity came up., down from 69% the previous year

22%

### AVERAGE SALARY INCREASE SOUGHT

When applying to a new role over the last year. Actual achieved was 7% on average

18%

### AVERAGE BONUS

With 29% receiving a larger bonus than the previous year

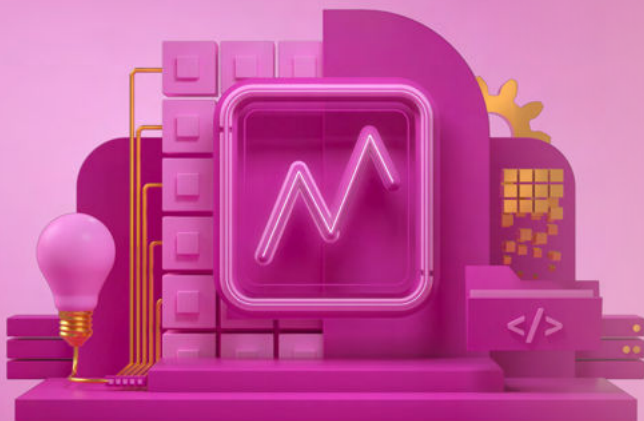
19%

### NUMBER OF FEMALE PROFESSIONALS

Down from 28% last year

51%

### WOULD LIKE TO WORK FULLY REMOTE



# DATA SCIENCE ROLES

US

# DATA SCIENCE ROLES

US

**As predicted, we have seen significant growth in generative artificial intelligence (AI) and machine learning (ML) developments in the data science (DS) market.**

The economic landscape has had a significant impact on the tech industry this year. A fact which is clearly impacting how secure DS professionals feel in their roles, particularly as budget restraints begin to bite.

Despite the challenges, employers are clearly taking steps to retain their DS professionals, with respondents receiving a 10% average change in pay in 2022 – the highest in the industry – and 41% received a larger bonus than the previous year.

## WHAT WE'RE SEEING IN THE DATA SCIENCE MARKET

The explosion of the tech industry has meant that tech-based roles have recently dominated jobs on the market, particularly in California. This, combined with a trend of over-hiring and the inflated salary ranges in play from 2021-2022, has meant that some top and senior-level candidates with high paying salaries have been left without jobs, as companies have been unable to sustain the same levels of investment.

We have found that even though many companies are now transitioning back into the office, the majority of candidates still prefer flexible working and being able to work in a different location without physically relocating, so it's no surprise to see that 39% of respondents would like to work fully remotely.

Over the next year, large language models (LLMs) are likely to play a greater role in the industry, along with increasing trends of ChatGPT. Generative AI and MLOps also look like strong contenders for growth this year.



**KRISTIANNA CHUNG**

Head of Data Science  
& Machine Learning

# DATA SCIENCE US

## SALARY AND DAY RATE BREAKDOWNS

### PERMANENT – AVERAGE ANNUAL SALARY

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Annual Base Salary - \$USD   East • West • Mid					
Data Science – ML Modelling	\$132k   \$126k   \$100k	\$160k   \$161k   \$118k	\$196k   \$201k   \$166k	\$253k   \$243k   \$213k	\$360k   \$260k   \$240k
Deep Learning & AI	\$132k   \$110k   n/a	\$173k   \$173k   \$119k	\$208k   \$228k   \$160k	\$252k   \$249k   \$202k	\$321k   \$269k   \$250k
ML Engineering – Deployment & Infrastructure	\$138k   \$117k   \$120k	\$180k   \$156k   \$140k	\$228k   \$201k   \$198k	\$287k   \$252k   \$244k	\$340k   \$283k   \$283k
MLOps	\$133k   \$108k   \$120k	\$189k   \$156k   \$140k	\$232k   \$198k   \$178k	n/a   \$250k   \$250k	n/a   \$269k   n/a
Natural Language Processing	\$138k   \$115k   n/a	\$176k   \$155k   \$155k	\$215k   \$195k   \$195k	\$250k   \$225k   \$225k	n/a   \$262k   n/a

### CONTRACT – AVERAGE DAY RATES

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Hourly Contract Rate - \$USD   East • West					
Data Science – ML Modelling	\$65   \$65	\$80   \$75	\$95   \$105	\$120   n/a	\$150   n/a
Deep Learning & AI	\$65   \$55	\$85   \$85	\$100   \$115	\$120   n/a	\$150   n/a
ML Engineering – Deployment & Infrastructure	\$70   n/a	\$90   \$80	\$100   \$100	\$130   n/a	\$150   n/a
MLOps	\$65   n/a	\$90   \$85	\$100   \$100	n/a   n/a	n/a   n/a
Natural Language Processing	\$70   n/a	\$85   \$75	\$100   \$100	\$120   n/a	n/a   n/a

# DATA SCIENCE ROLES

## KEY FINDINGS

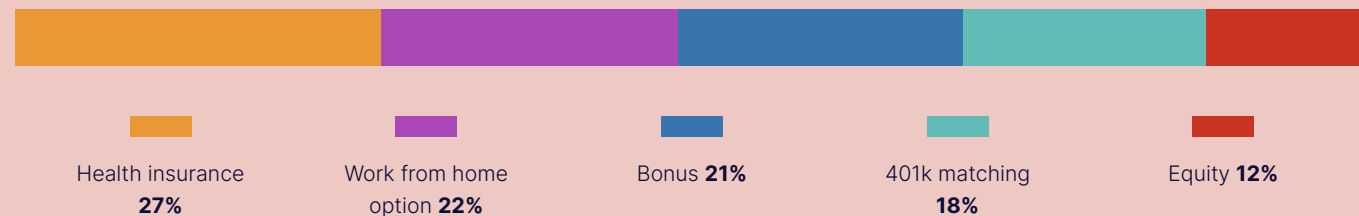
### TOP FIVE REASONS FOR LEAVING A ROLE



### TOP FIVE TECHNOLOGIES USED BY PROFESSIONALS IN DATA SCIENCE JOBS



### THE MOST DESIRABLE BENEFITS



# DATA SCIENCE ROLES

## KEY FINDINGS

66%

### FEEL AS OR MORE SECURE

In their role than in 2022, down from 93% the previous year

66%

### WOULD LEAVE THEIR ROLE

If the right opportunity came up

22%

### AVERAGE SALARY INCREASE SOUGHT

When applying to a new role over the last year. Actual achieved was 10% on average – the highest in the industry

3 YEARS

### AVERAGE LENGTH OF TIME IN A ROLE

17%

### NUMBER OF FEMALE PROFESSIONALS

Down from 27% last year

29%

### AVERAGE BONUS

With 41% receiving a larger bonus than the previous year



# DIGITAL ANALYTICS ROLES

US

# DIGITAL ANALYTICS ROLES

US

**The combination of a slowing economy, layoffs and a possible recession has prohibited any significant growth this year in the digital analytics market.** The tech sector has been heavily impacted but industries such as insurance, healthcare, manufacturing, and energy have continued to hire at a steady rate.

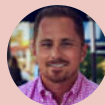
Over the last year, the companies in a position stable enough to be hiring have opted for a more conservative approach to salaries in order to protect cash flow and balance sheets in what has been uncertain times. Budgets have been tight for most organizations and salary increases reflect this, with less companies willing to push beyond their boundaries.

## WHAT WE'RE SEEING IN THE DIGITAL ANALYTICS MARKET

Digital analytics is about increasing conversion and spending marketing dollars more efficiently, to achieve the best ROAS (return on ad spend). We predict that as the market stabilizes and positive sentiment grows, organizations will resume investment of their budget into marketing and advertising which will lead to an increase in the demand for digital analytics talent.

Digital and marketing analytics has been impacted by the economic downturn, with fewer vacancies compared to the hiring frenzy in 2021-2022. Those who are hiring are looking for a mixture of technical and softer skills, blended with a strategic mindset. The ability to visualize data and develop actionable insights which can be effectively communicated to both technical and non-technical audiences are essential attributes that will help candidates be more recognizable in the recruitment process.

For the remaining months of the year, we expect to see an increase in the demand for Adobe Launch and GA4 implementation skills with GA4 replacing universal analytics. We also predict media and advertising agencies will return to hiring in 2024 after 12 months of turbulence and uncertainty.



**JOSHUA POORE**  
Associate Director

# DIGITAL ANALYTICS

## SALARY AND DAY RATE BREAKDOWNS

### PERMANENT – AVERAGE ANNUAL SALARY

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Annual Base Salary - \$USD   East • West • Mid					
Conversion Rate Optimization	\$95k   \$92k   n/a	\$130k   \$120k   \$120k	\$162k   \$168k   n/a	\$196k   \$220k   \$160k	n/a   n/a   n/a
Media Analytics	\$81k   \$91k   \$75k	\$138k   \$133k   \$85k	\$168k   \$180k   \$141k	£193k   \$208k   \$185k	\$232k   \$230k   \$230k
Performance Marketing & Growth	\$75k   \$76k   \$68k	\$104k   \$125k   \$130k	\$135k   \$166k   \$170k	\$173k   \$195k   \$200k	\$200k   \$228k   n/a
Web Analytics	\$90k   \$87k   \$60k	\$145k   \$130k   n/a	\$162k   \$155k   \$150k	\$200k   \$184k   n/a	\$240k   n/a   n/a
Web Implementation	\$97k   \$95k   n/a	\$130k   \$132k   \$106k	\$154k   \$163k   \$200k	\$196k   \$190k   n/a	n/a   n/a   n/a

### CONTRACT – AVERAGE DAY RATES

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Hourly Contract Rate - \$USD   East • West					
Conversion Rate Optimization	n/a   n/a	\$65   \$60	\$80   \$70	\$100   n/a	n/a   n/a
Media Analytics	n/a   n/a	\$70   \$60	\$85   \$95	\$100   n/a	n/a   n/a
Performance Marketing & Growth	n/a   n/a	\$55   \$65	\$70   \$80	\$85   n/a	n/a   n/a
Web Analytics	n/a   \$40	\$75   \$65	\$85   \$70	\$110   n/a	n/a   n/a
Web Implementation	n/a   \$45	\$65   \$65	\$80   \$75	\$100   n/a	n/a   n/a

# DIGITAL ANALYTICS ROLES

## KEY FINDINGS

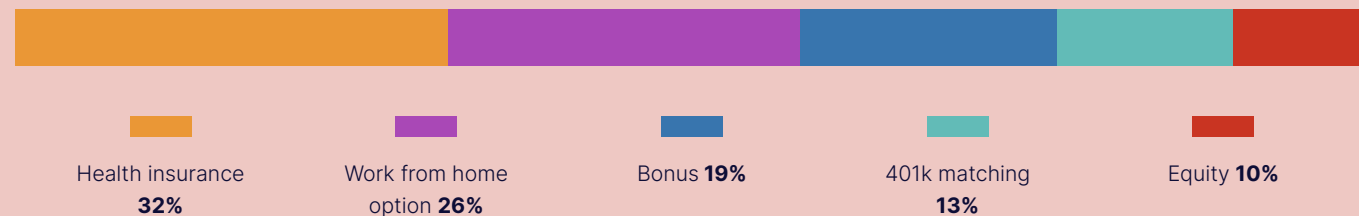
### TOP FIVE REASONS FOR LEAVING A ROLE



### TOP FIVE TECHNOLOGIES USED BY PROFESSIONALS IN DIGITAL ANALYTICS

- |                     |                    |          |
|---------------------|--------------------|----------|
| 1. Google Analytics | 3. Adobe Analytics | 5. Excel |
| 2. Tableau          | 4. SQL             |          |

### THE MOST DESIRABLE BENEFITS



# DIGITAL ANALYTICS ROLES

## KEY FINDINGS

83%

### FEEL AS OR MORE SECURE

In their role than in 2022. The most secure in the industry

46%

### WOULD LIKE TO WORK FULLY REMOTE

21%

### AVERAGE SALARY INCREASE SOUGHT

When applying to a role over the last year. Actual achieved was 8% on average

73%

### WOULD LEAVE THEIR ROLE

If the right opportunity came up. The most likely in the industry

27%

### NUMBER OF FEMALE PROFESSIONALS

Slightly up from 26% last year



# RISK ANALYTICS ROLES

US

# RISK ANALYTICS ROLES

US

**There has been significant growth in fintech as well as in insurance and investment management over the last 12 months in risk analytics.**

The current economic climate has sparked a decrease in the number of people who feel secure in their role, as companies have been forced to reduce team sizes to cope with the turbulence. 52% feel as or more secure in their role than in 2022 which was down from 91% the previous year and the least secure in the industry.

Candidates understand that in most risk teams they have access to sensitive customer information and, as a result, need to work in a hybrid environment, rather than being fully remote.

Communication skills are increasingly desirable in the risk market. People working in these teams need to work seamlessly with non-technical teams to deliver insights and recommendations. Being able to help people of all levels of data knowledge understand what is happening is vital.

## WHAT WE'RE SEEING IN RISK ANALYTICS MARKET

Although some are feeling less secure in their role due to team reductions, candidates in the risk market have received an average bonus of 20% – the highest in the industry.

Towards the end of 2021 and in the first half of 2022, many businesses were booming and, as a result, companies were able to exceed targeted bonuses due to the performance of the teams. This is also a fantastic retention tool to keep top talent from being swayed by other companies.

Finding high-quality talent remains tough in the market, which has seen an increase in counteroffers. Staying at a company is easier than candidates having to prove themselves in a new role, but this does not change the reason someone was looking in the first place, nor does it facilitate professional growth either.

Over the next year, we're expecting to see greater innovation within the risk market. We are seeing roles become broader, and a greater demand for the understanding of data governance, regulations around data usage, and tightening of laws about data use. There will be a greater opportunity for risk professionals to get exposure to different areas of analytics.



**JENNI KAVANAGH**  
Associate Director

# RISK ANALYTICS

## SALARY AND DAY RATE BREAKDOWNS

### PERMANENT – AVERAGE ANNUAL SALARY

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Annual base salary - \$USD   East • West • Mid					
Decision Science	\$112k   \$116k   n/a	\$150k   \$156k   \$150k	\$173k   \$177k   \$203k	\$203k   \$204k   \$230k	\$268k   \$284k   \$284k
Decision Systems	\$138k   n/a   n/a	\$148k   n/a   n/a	\$169k   n/a   n/a	\$201k   \$204k   \$260k	\$248k   \$268k   \$288k
Fraud Analytics	\$134k   \$115k   n/a	\$152k   \$157k   \$115k	\$180k   \$175k   n/a	\$215k   n/a   n/a	\$273k   n/a   n/a
Portfolio Management	\$118k   \$117k   n/a	\$135k   \$163k   \$147k	\$174k   n/a   n/a	\$210k   n/a   n/a	\$250k   n/a   n/a

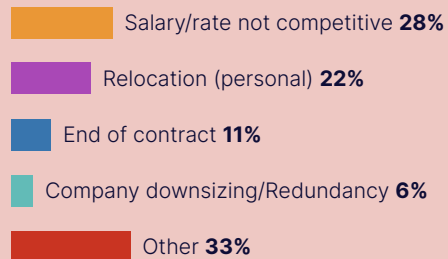
### CONTRACT – AVERAGE HOURLY RATES

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Hourly Contract Rate - \$USD   East					
Decision Science	\$60	\$75	\$100	\$110	\$130
Decision Systems	\$65	\$75	\$90	\$100	\$125
Fraud Analytics	\$65	\$75	\$90	\$110	\$130
Portfolio Management	\$60	\$75	\$100	\$115	\$130

# RISK ANALYTICS ROLES

## KEY FINDINGS

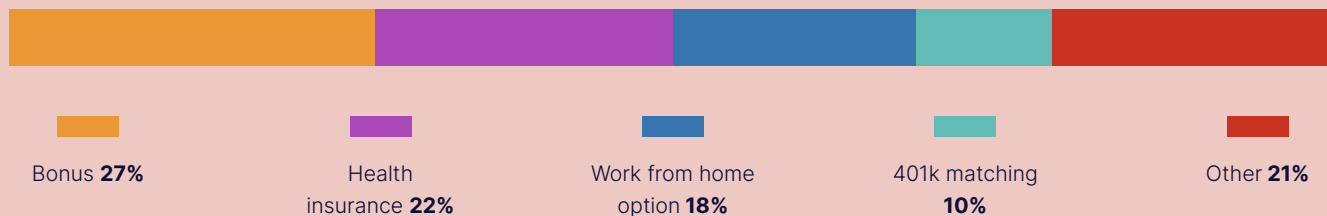
### TOP FIVE REASONS FOR LEAVING A ROLE



### TOP FIVE TECHNOLOGIES USED BY PROFESSIONALS IN RISK ANALYTICS

- |           |            |        |
|-----------|------------|--------|
| 1. Python | 3. Excel   | 5. AWS |
| 2. SQL    | 4. Tableau | 6. R   |

### THE MOST DESIRABLE BENEFITS



# RISK ANALYTICS ROLES

## KEY FINDINGS

52%

### FEEL AS OR MORE SECURE

In their role than in 2022. Down from 91% the previous year and the least secure in the industry

59%

### WOULD LEAVE THEIR ROLE

If the right opportunity came up. Down from 76% the previous year

25%

### AVERAGE SALARY INCREASE SOUGHT

When applying to a new role over the last year. Actual achieved was 4% on average

4 YEARS

### AVERAGE LENGTH OF TIME IN A ROLE

11%

### NUMBER OF FEMALE PROFESSIONALS

Down from 20% last year

20%

### AVERAGE BONUS

With 30% receiving a larger bonus than the previous year



# LIFE SCIENCE ANALYTICS ROLES

US

# LIFE SCIENCE ANALYTICS ROLES

US

**Hiring budgets this year have been less focused on research and development (R&D) and leaned more heavily towards clinical applications.** This can largely be attributed to companies deciding to funnel funds towards projects and products that will generate revenue sooner. As a result, there has been a marked uptick in positions focused on biostatistics/computational chemistry, relative to the rest of the life science analytics (LSA) field.

However, in the year ahead we are expecting to witness a rebound in R&D spend. Too many companies take the decision to deprioritize this area, and then realize that progress has fallen behind where it needs to, leading to a significant uptick in hiring/filling headcount.

## WHAT WE'RE SEEING IN LIFE SCIENCES ANALYTICS MARKET

Due to a nearly 25 percentage point drop in both sense of job security along with the openness to leaving their current position, passively open candidates are becoming harder to land than ever. This is causing some companies to take active steps in solidifying employee retention, for example via financial incentives, with 35% of respondents received a larger bonus than the previous year. And this is clearly hitting the mark, with candidates rating bonuses as the second most desirable benefit.

Candidates also continue to value work flexibility, identifying a 'work from home option' as one of their top three most desirable benefits. However, with hybrid work situations becoming the norm, there has been less of a push towards fully remote work from candidates, a fact caused by the small quantity of opportunities allowing this.



**RILEY HSIA**

Managing Consultant,  
Bioinformatics & Computational Biology



# LIFE SCIENCE ANALYTICS

## SALARY AND DAY RATE BREAKDOWNS

### PERMANENT – AVERAGE ANNUAL SALARY

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Annual base salary - \$USD   East • West					
Bioinformatics	n/a   \$90k	\$155k   \$152k	n/a   \$197k	\$204k   \$242k	\$264k   \$264k
Biological Data Science	n/a   \$136k	\$160k   \$174k	n/a   \$215k	\$220k   \$268k	n/a   \$289k
Biological ML	n/a   \$136k	n/a   \$174k	n/a   \$215k	n/a   \$268k	n/a   \$289k
Biostatistics	\$140k   \$110k	\$155k   \$156k	n/a   \$180k	\$230k   \$230k	n/a   \$253k
Computational Biology	\$144k   \$104k	\$173k   \$164k	\$192k   \$201k	\$180k   \$215k	\$278k   \$262k
Computational Chemistry	n/a   \$116k	\$173k   \$173k	n/a   \$189k	\$200k   \$202k	n/a   \$271k
Research Informatics	n/a   \$121k	n/a   \$148k	n/a   \$168k	\$207k   \$193k	n/a   \$245k

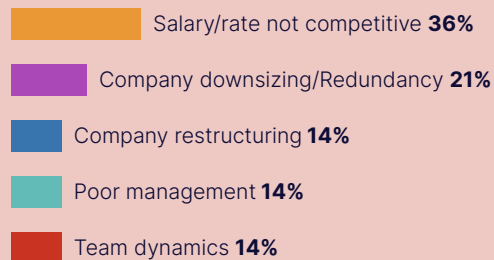
### CONTRACT – AVERAGE DAY RATES

Role Type	Entry Level	Mid-Level	Principal/ Manager Level	Technical Lead/ Director	VP and above
Hourly Contract Rate - \$USD   East • West					
Bioinformatics	\$60   n/a	\$80   n/a	\$95   n/a	n/a   n/a	n/a   n/a
Computational Biology	n/a   n/a	n/a   n/a	\$130   \$130	n/a   n/a	n/a   n/a

# LIFE SCIENCES ANALYTICS ROLES

## KEY FINDINGS

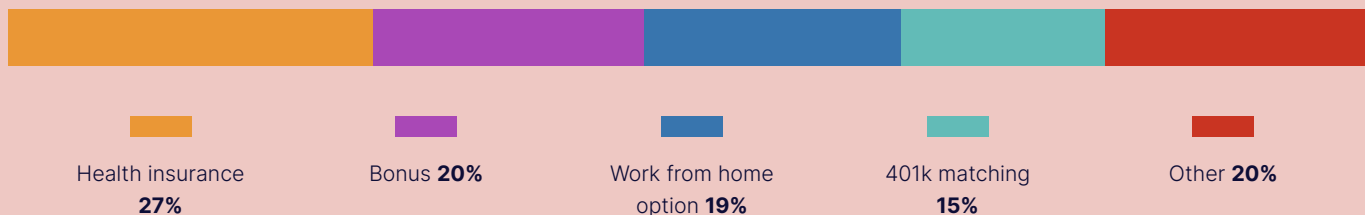
### TOP FIVE REASONS FOR LEAVING A ROLE



### TOP FIVE TECHNOLOGIES USED BY PROFESSIONALS IN LIFE SCIENCE ANALYTICS

- |           |        |                          |
|-----------|--------|--------------------------|
| 1. Python | 3. AWS | 5. Google Cloud Platform |
| 2. R      | 4. SQL |                          |

### THE MOST DESIRABLE BENEFITS



# LIFE SCIENCES ANALYTICS ROLES

## KEY FINDINGS

70%

### FEEL AS OR MORE SECURE

In their role than in 2022. Down from 94% the previous year

57%

### WOULD LEAVE THEIR ROLE

If the right opportunity came up, down from 72% the previous year

23%

### AVERAGE SALARY INCREASE SOUGHT

When applying to a new role over the last year. Actual achieved was 5% on average

32%

### WOULD PREFER TO WORK FULLY REMOTE

24%

### NUMBER OF FEMALE PROFESSIONALS

Down from 32% last year

20%

### AVERAGE BONUS

With 35% receiving a larger bonus than the previous year

# THE STATE OF CONTRACT WORK

## US

**The demand for contractor work remains steady, as companies look to pursue cost effective hiring strategies.**

Some hiring managers have become increasingly risk averse and are therefore frequently backfilling any full-time leavers with contractors instead of full-time employees.

And employers are clearly seeing value in this approach, with just under half (49%) of those surveyed receiving an extension to their latest contract. Those that did saw an average extension of a noteworthy 35 weeks – up from 12 weeks the year before.

That said, there's no doubt that clients are trying to get more done with less money, and contract budgets have reduced over the last year. Respondents are clearly feeling the squeeze with only 31% of respondents expecting to see their daily rate increase for their role, down from 68% in the previous year. We've also seen a trend of US companies shifting their hiring to Latin America, and Canada.

Industries that traditionally hire heavily into data and analytics have seen a slight slowing in hiring compared to last year, for example in entertainment, streaming and even wider tech. Where we have witnessed a surge, however, is in sectors that historically hadn't hired in data and analytics, for example government organizations.

Over the next year we're expecting to see the buzz around artificial intelligence (AI) causing companies to increasingly lean on consultancies, as a cheaper solution to creating full stack teams internally. As a result, this is likely to generate more project-based work and contract-focused solutions.



**CHARLIE AUSTIN**

Manager,  
AI, Analytics, Engineering & Marketing

# THE STATE OF CONTRACT WORK

US

31%

## RECEIVED A RATE INCREASE

Down from 68% the previous year

49%

## RECEIVED AN EXTENSION TO THEIR LATEST CONTRACT

With an average extension of 35 weeks

21%

## OFFERED A PERMANENT POSITION AT THE END OF THEIR LATEST CONTRACT

54% accepted, and 43% of these saw their pay increase as a result

35

## AVERAGE HOURS WORKED PER WEEK

29%

## AVERAGE HOURLY RATE INCREASE

# CONTACT INFORMATION

Got any questions about the 2023 Salary Guide? Please feel free to contact us.



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