BURTCH WORKS

# DATA SCIENCE & AI PROFESSIONALS SALARY REPORT

2023 EDITION

BURTCH WORKS
A REV4 BRAND

INTRODUCTION

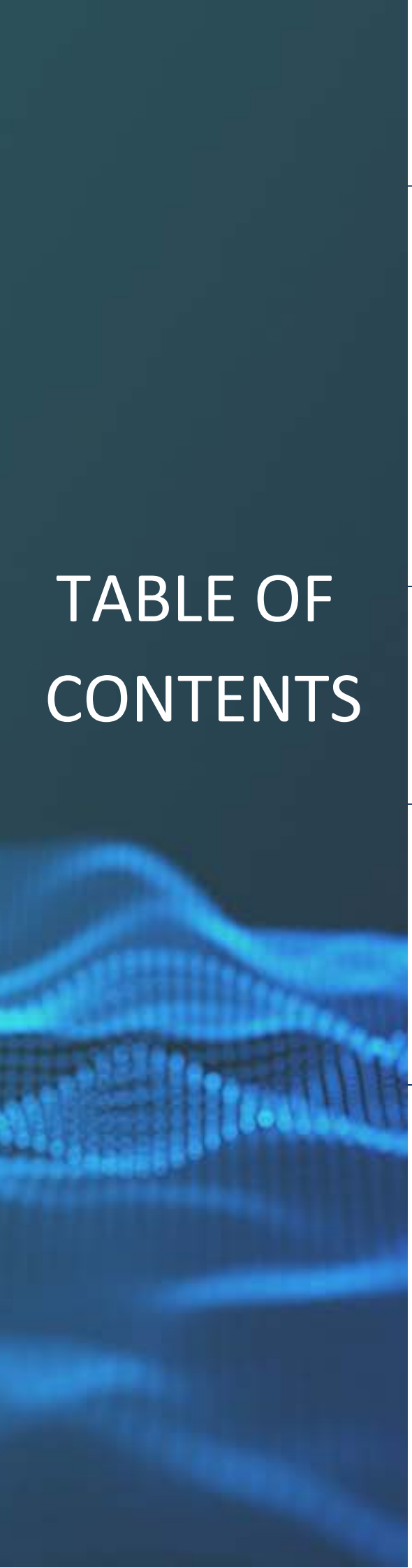
# ABOUT BURTCH WORKS

Burtch Works is the national leader in Total Talent Solutions, specializing in Data Science, Artificial Intelligence, Analytics, Data Engineering, Machine Learning, Product and Technology. As pioneers of the industry, we pride ourselves on our specialized approach to providing subject matter expertise, compelling job opportunities, and leading information and research on trends in this industry.

After 40 years of working for the largest staffing and executive search companies, we've observed how the traditional recruiting process is broken. As a result, our team developed an innovative workforce marketplace that is transforming the candidate and customer experience. We provide curated industry insights, expertise, and career advocacy that fuels growth, both professionally and personally, for our candidates and customers. Our workforce marketplace technology coupled with industry expertise provides unprecedented, personalized service and creative solutions for both our talent community and customer organizations looking to thrive in the fourth industrial revolution.

This year, Burtch Works is proud to receive recognition from Forbes as one of America's Best Professional Recruiting Firms, alongside being honored with the 2023 Clearly Rated Best of Staffing and Talent awards, and listed in the prestigious Inc. 5000 - The Most Successful Companies in America. In maintaining such strong relationships with candidates and clients, Burtch Works has an especially unique ability to examine hiring and compensation trends over time.

Using our extensive proprietary data, we publish several highly anticipated reports each year that investigate demographic, geographic, industry, and compensation data for Data Engineering, Analytics, Data Science, Artificial Intelligence, and Marketing Research professionals. The Burtch Works Reports provide an exceptional vantage point on compensation for these professionals across the country and contain critical information both for individuals mapping their career strategy, and for leaders who are hiring and planning to recruit and retain outstanding talent for their teams. Furthermore, our commitment to transparency has led us to launch our very own "shiny app" product, the Dynamic Salary Explorer. Leveraging proprietary first-party data, this tool allows for a new level of compensation transparency for data science and AI professionals.



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***Data Science & AI Hiring Landscape***

# MISMATCH OF SUPPLY VS. DEMAND

Over the past 12 months, the data science and AI hiring market has undergone significant transformations, shaping the landscape for job seekers and organizations alike. The period from 2021 to 2022 witnessed an unprecedented surge in job opportunities, often referred to as the "great resignation," resulting in a remarkable influx of available positions. This sudden surge led to a hiring frenzy, with organizations going above and beyond to attract and retain talent, including offering competitive compensation packages, increased flexibility, fringe benefits, and adopting more expedited hiring practices. Employers became increasingly open to considering candidates who may not have met all the desired qualifications or possessed extensive experience, acknowledging the urgency to address concerns about attrition and perceived talent shortages.

However, the 2023 job market is now grappling with economic uncertainty, prompting a correction phase characterized by layoffs, hiring freezes, and a heightened sense of caution in hiring decisions. Employers have become more discerning and meticulous, placing greater emphasis on candidates who not only meet the necessary qualifications but also bring immediate value to their organizations without requiring extensive training or onboarding.

As the economic landscape stabilizes and organizations regain confidence, it will be intriguing to observe when they start re-embracing the expansion of their data science and AI teams. We will continue to monitor hiring and broader economic trends as they unfold and report back as they emerge.

***Evolving Demand for Data Science & AI Talent***

# Q3/Q4 HIRING SURVEY

**31%**

of leaders **plan to grow** their data teams.

**40%**

of data teams plan to **hold steady** in their hiring plans.

**54%**

of data teams plan to make **permanent hires only.**

**26%**

of data teams plan to make **contract hires only.**

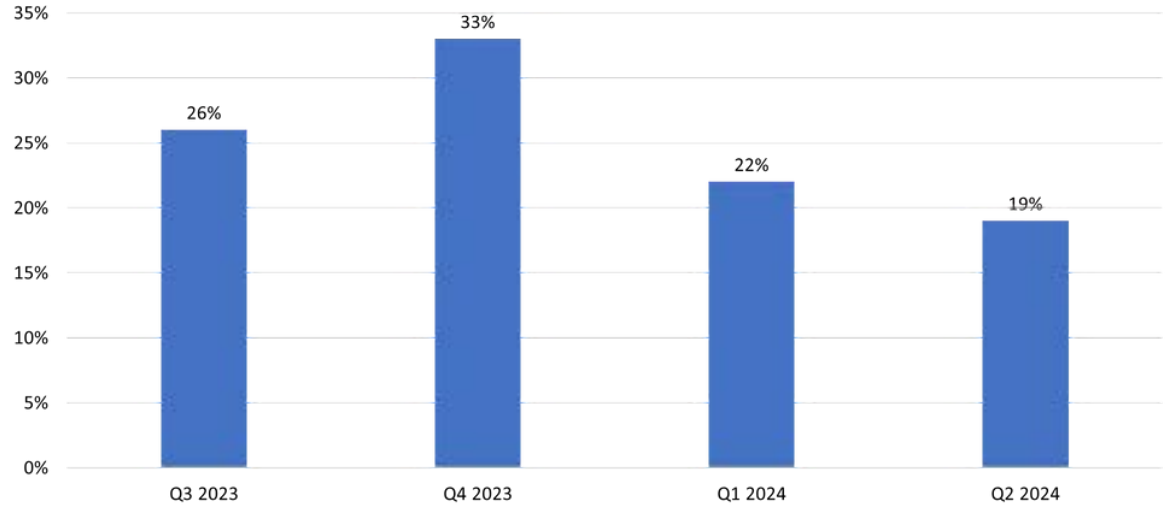
**24%**

of data teams are **hiring primarily to increase headcount.**

**51%**

of data teams are **hiring primarily due to backfilling.**

During these uncertain times, it is hard to predict when we will see economic growth.
*If you are not currently hiring, when do you anticipate resuming your hiring plans?*




## Hiring Demand OVERVIEW

Our respondents spanned over **155 companies across the U.S**., and while 40% of surveyed teams reported they are holding steady, majority of teams anticipate to resume normal hiring plans before the end of the year.

***Explosion of AI***

# AI'S REVOLUTION: UNPRECEDENTED GROWTH

The field of AI has seen remarkable growth and expansion due to advancements in cloud technology, co-location of data centers, improved modeling algorithms, and automation. This has created a high demand for professionals skilled in generative AI and Large Language Models. To develop an effective AI strategy, organizations are collaborating with AI experts to stay updated on the latest technology developments, prioritize use-cases, and devise strategic plans.

This increased focus on AI has led to the emergence of new job titles tailored specifically to this area. For example, a recent client created a **Director of Data Science - Generative AI** role to develop and lead their generative AI initiatives. We expect that this trend will continue to evolve, giving rise to new titles such as AI Engineer and other related positions as the demand for AI expertise continues to grow.

Another significant development is the increasing emphasis on Data and Data Science as a Service (DaaS, DSaaS) as well as AI-oriented data science roles. This shift highlights the rising demand for professionals capable of effectively leveraging AI technologies in the realm of data science. The availability of complex AI models as services has revolutionized the landscape, eliminating the need for organizations to invest heavily in developing and maintaining such models themselves. Consequently, there is a greater need for skilled individuals who can implement and customize these AI models to align with specific business requirements, unlocking their full potential.

## Venture Capital Fuels AI's Transformative Potential

Moreover, private equity and venture capital funds have recognized the immense potential of AI for disruptive innovation and economic growth. As a result, substantial investments are being allocated to AI projects, products, and startups. This influx of capital not only fosters research and development but also accelerates technological advancements, propelling the expansion of AI applications across various industries and sectors.

***Unlocking Expertise for Targeted Impact***

# SPECIALIZATION IN DATA SCIENCE: NAVIGATING NICHE DOMAINS

The landscape of data science roles is experiencing a notable shift towards increased specialization. As the field continues to evolve and mature, professionals are recognizing the value of focusing and honing their expertise in specific areas. This specialization allows them to become experts in niche domains, leveraging their skills to tackle complex challenges and deliver high-quality results.

A clear trend is emerging towards category and skill-family specialization, with professionals focusing on areas such as **Large Language Models (LLMs)**, **Natural Language Processing (NLP), Generative Language Model Experiences, ML Engineering, Graphical Probabilistic Modeling, and Data Product development**.

This emphasis on specialization not only enables data science professionals to deepen their knowledge and skills but also enhances their ability to drive innovation and make significant contributions in their chosen domains.

***Evolution in Candidate Motivations***

# SHIFTING PRIORITIES: STABILITY & IMPACT

Where higher salaries once took precedence, data science & AI professionals are now placing greater emphasis on stability and the chance to create a meaningful impact within organizations. **Candidates value roles where their contributions are valued and have the ability to work on projects where they feel a personal connection or interest.** This new emphasis reflects a deeper desire for fulfillment, as professionals strive to align their work with their values.

Due to recent economic uncertainty and widespread layoffs, some job seekers have become more cautious and discerning when evaluating new career opportunities. As candidates are assessing opportunities they are being selective in choosing positions that not only match their goals, interests, and skill set but also provide a sense of security and a chance to make a lasting impact.

***Evolution in Candidate Motivations***

# CANDIDATE SENTIMENT SURVEY

**65%**

of candidates who are **currently employed are actively or passively looking** for a new role.

**36%**

of candidates **consider PTO to be the most desirable benefit, followed by 401K match** when considering a new role.

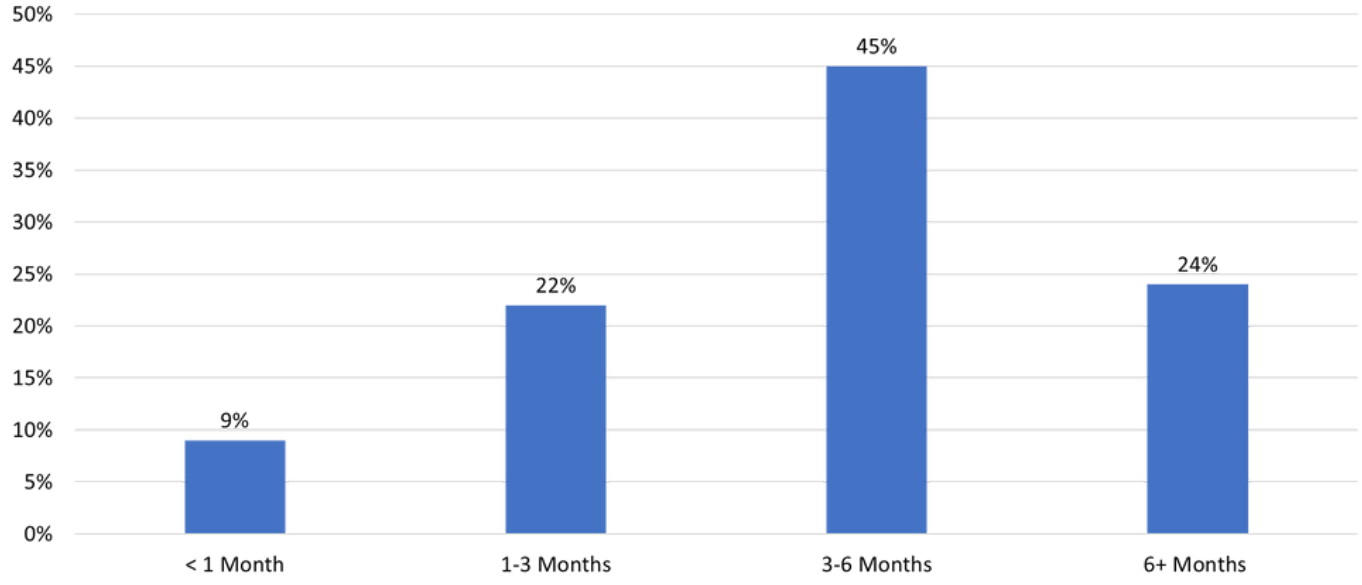
**86%**

of candidates consider **company mission and values to be an important factor** when considering a new role.

**Based on the survey responses, candidates provided the following ranking of most to least important factors when considering a new role:**

1. Career Growth
2. Job Security
3. Work-from-Home Flexibility
4. Interesting Work
5. Organization's Commitment to Data Science & Analytics

If you are currently unemployed or were impacted by layoffs and found a new role, *how long did the job search take?*




## Candidate Sentiment OVERVIEW

Our sample size for this survey is comprised of 160 data science and AI professionals. A significant portion of the sample (65%) is open to new opportunities, either actively or passively despite current economic conditions. Taking note of this, retention strategies should be a focus for all organizations looking to improve employee engagement and minimize attrition rates. It is evident that a substantial number of data science and AI professionals are receptive to exploring alternative career paths and are prioritizing factors such as career growth, job security, flexibility and company impact, mission, and values.

***AI's Revolution: Unprecedented Growth***

# CLOSING THE GAP: EDUCATION & INDUSTRY

In recent years, there has been a noticeable increase in the establishment of master's and Ph.D. programs in quantitative fields by universities. However, this has led to a slight disparity between the growing supply of new graduates and the demand for professionals entering the data science and AI job market. As a result, recent graduates, especially those lacking prior experience, are facing a higher unemployment rate. Concerns about the impact of AI on job prospects are also more prevalent among junior-level professionals.

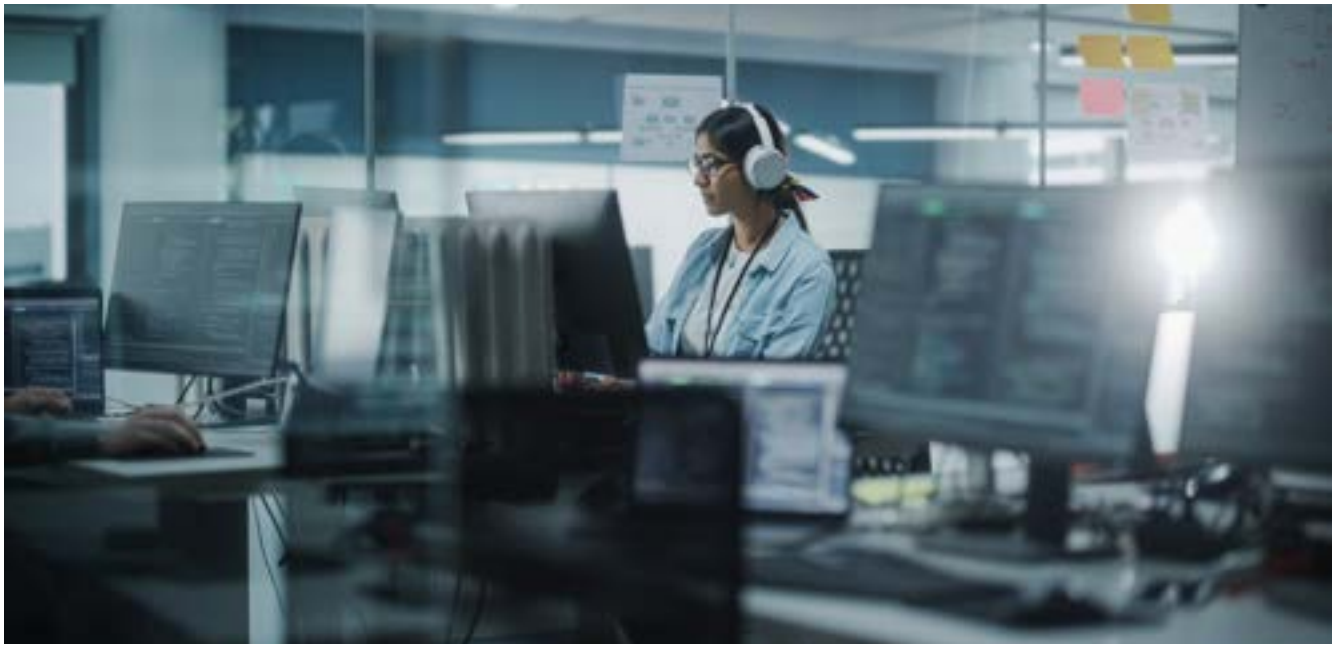
The competitive nature of the job market and employers' preference for candidates with practical experience present challenges for these graduates in securing employment opportunities. This emphasizes the significance of gaining relevant experience through internships or hands-on opportunities while pursuing their degrees. Therefore, when students assess different programs, it is important to consider factors such as corporate partnerships, internships, practicum, and capstone projects. These elements play a crucial role in preparing students for future opportunities and enhance their marketability when seeking entry-level roles after graduation.

## Advancing Pay Equity: The Impact of Pay Transparency Laws

This year, several pay transparency laws have gone into effect, bringing about significant changes in the workplace. By requiring employers to disclose salary ranges for job positions or prohibiting pay secrecy policies, these regulations empower employees to have a clearer understanding of their own worth and negotiating power. Ultimately, these pay transparency laws create a more equitable and inclusive work environment, fostering greater employee satisfaction and productivity while narrowing the gap in pay disparities.

***Unlocking Expertise for Targeted Impact***

# CONTRACT TO HIRE



Contract opportunities have emerged as a valuable option for data science and AI professionals in today's dynamic job market. **Contract roles serve as stepping stones for career development, providing opportunities for growth and opening doors to new prospects.** These positions offer early-career professionals marketable experience, practical skills, and an expanded professional network, enhancing their resumes for future opportunities.

For senior professionals, contract work enables engagement in diverse projects and assignments across various organizations and industries. This allows them to leverage their expertise and experience, keeping their skills sharp and embracing new challenges. Additionally, contract-to-hire arrangements provide individuals and organizations with a trial period to assess compatibility, making informed decisions before committing to permanent positions.

Similarly, **Leadership as a Service** has also become a creative solution for organizations with limitations. Rather than hiring full-time senior executives, organizations are exploring alternative arrangements, such as fractional roles or project-based work. This enables them to leverage the expertise and guidance of seasoned leaders while effectively managing costs. This approach also proves advantageous for senior executives seeking more flexibility.

SECTION 2

# COMPENSATION CHANGES

# JOB LEVEL SEGMENTATION

To examine how the compensation of Data Scientists and AI Professionals varies, Burtch Works used characteristics of their jobs (level, location of employer, industry) and demographic characteristics (gender, years of experience, residency status) to segment data scientists.

Burtch Works has developed the following job categories:

## Individual Contributors

| Level | Responsibility | Typical Years of Experience |
|---|---|---|
| IC-1 | Learning the job, hands-on analytics & modeling | 0-3 years |
| IC-2 | Hands-on, advanced problems, may help train analysts | 4-8 years |
| IC-3 | Analytics SMEs, mentors and trains analysts | 9+ years |

## Managers

| Level | Responsibility | Typical No. of Reports |
|---|---|---|
| MG-1 | Tactical, leads a small team w/in a function, project execution responsibility | 1-3 reports (direct or matrixed) |
| MG-2 | Leads a function, moderately sized team, executes strategy | 4-15 reports (direct or matrixed) |
| MG-3 | Senior/executive management, determine strategy, large team | 15+ reports (direct or matrixed) |

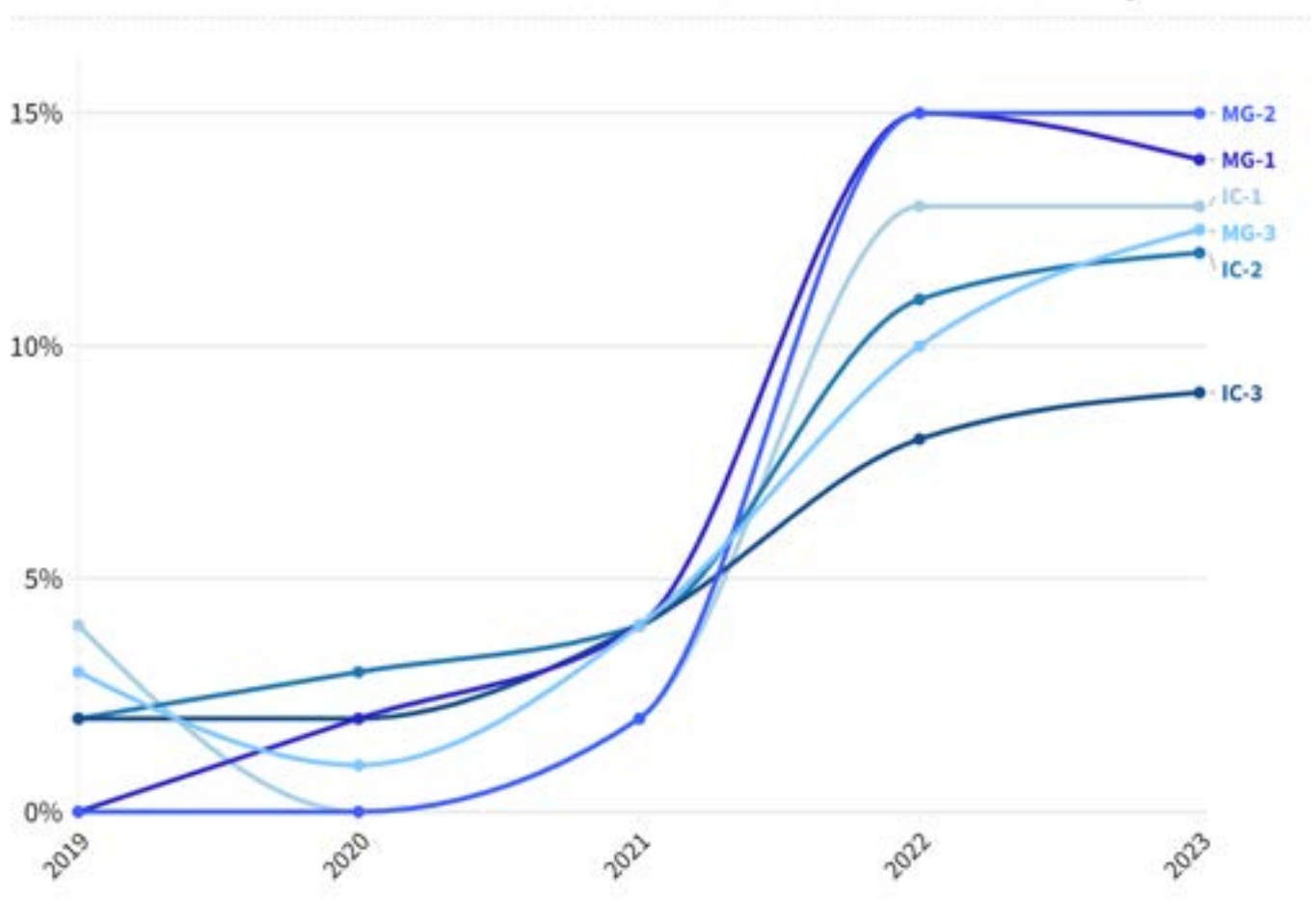
# THE DISTINCT ROLES OF DATA SCIENTISTS AND AI PROFESSIONALS

Burtch Works differentiates professionals that work primarily with structured data **(Data Scientists)** from those that work primarily with unstructured data **(AI Professionals)**. Both groups analyze data and create statistical models to glean insights and prescribe action, but AI Professionals use sophisticated computer science and programming skills that are not typically used by Data Scientists. This variation in skillset has a marked influence on salaries.

**This year our sample included 1,331 Data Scientists and 506 AI Professionals for a total sample of 1,837 data professionals.**

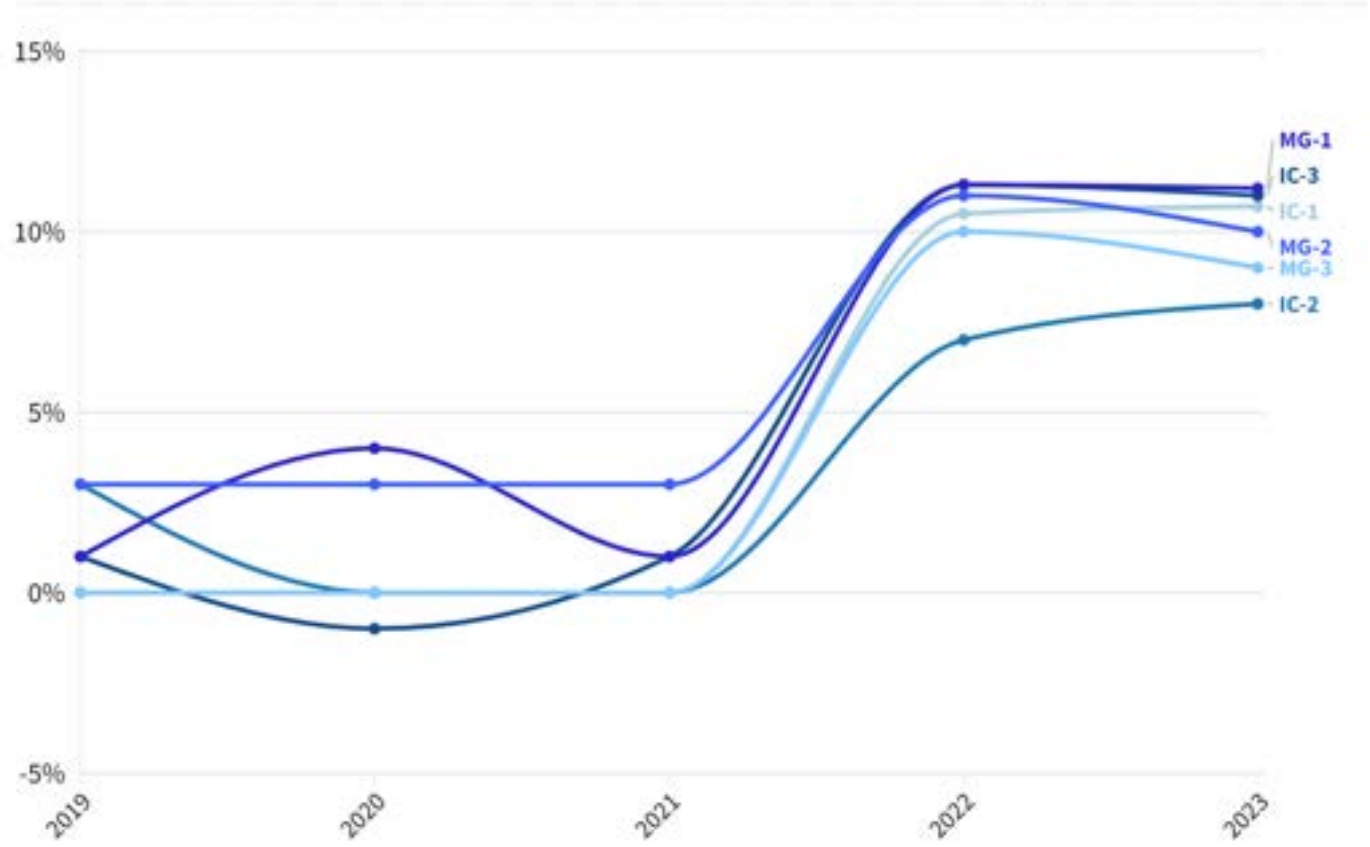
COMPENSATION CHANGES OVER TIME

**Data Science Professionals - Mean Base Salary**



COMPENSATION CHANGES OVER TIME

**AI Professionals - Mean Base Salary**



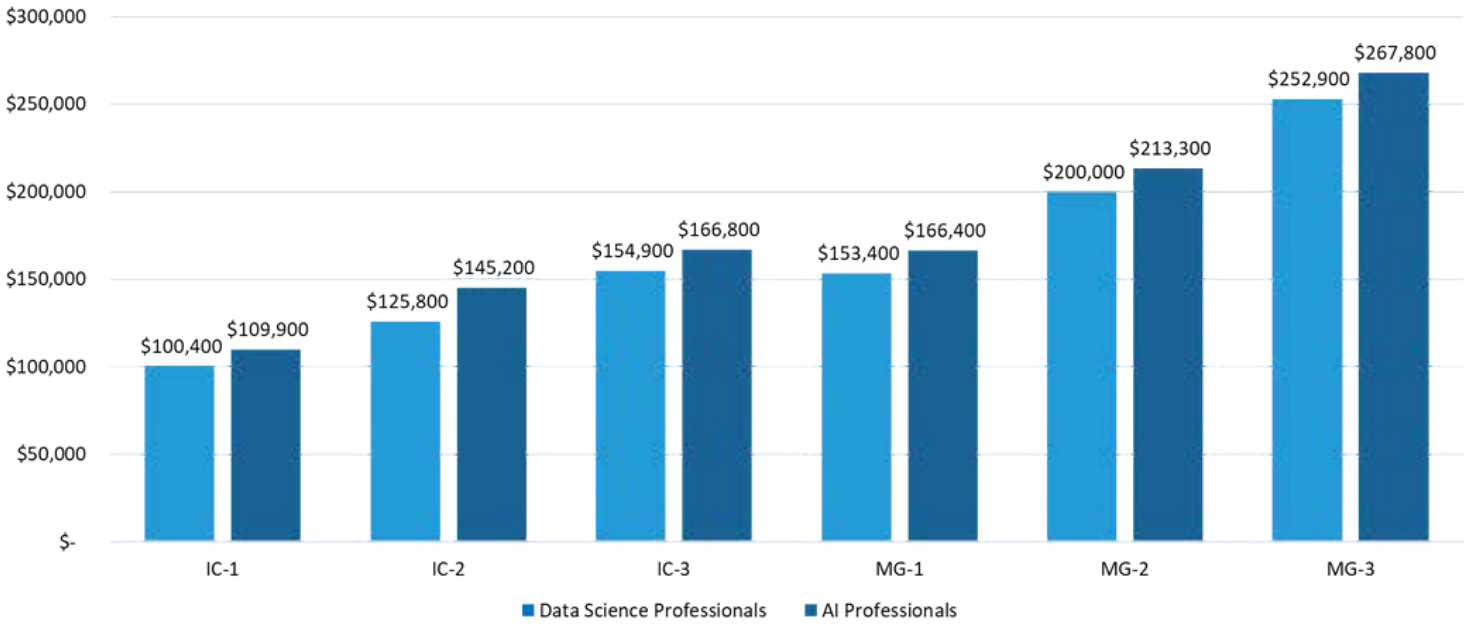

# IMPACTS OF SUPPLY & DEMAND

Burtch Works has been reporting on the salaries of Data Scientists and AI Professionals for 10+ years. Our latest report for 2023, which covers the period from May 2022 to April 2023, reveals a remarkable trend: **salaries have reached a state of stability with smaller percentage increases in 2023 after a year of unprecedented growth in 2022.**

# 2023 BASELINE DATA

While historically most job levels have experienced relatively steady increases or decreases from year to year, the 2022 samples unveiled a significant surge in salaries. This surge can be attributed to the **persistent imbalance between the supply and demand of talent in the field of data science and AI—a challenge that continues to persist in 2023.** As economical instabilities emerge, outlook on the near-term future remains uncertain, but we will be sure to report on any changes as they occur.

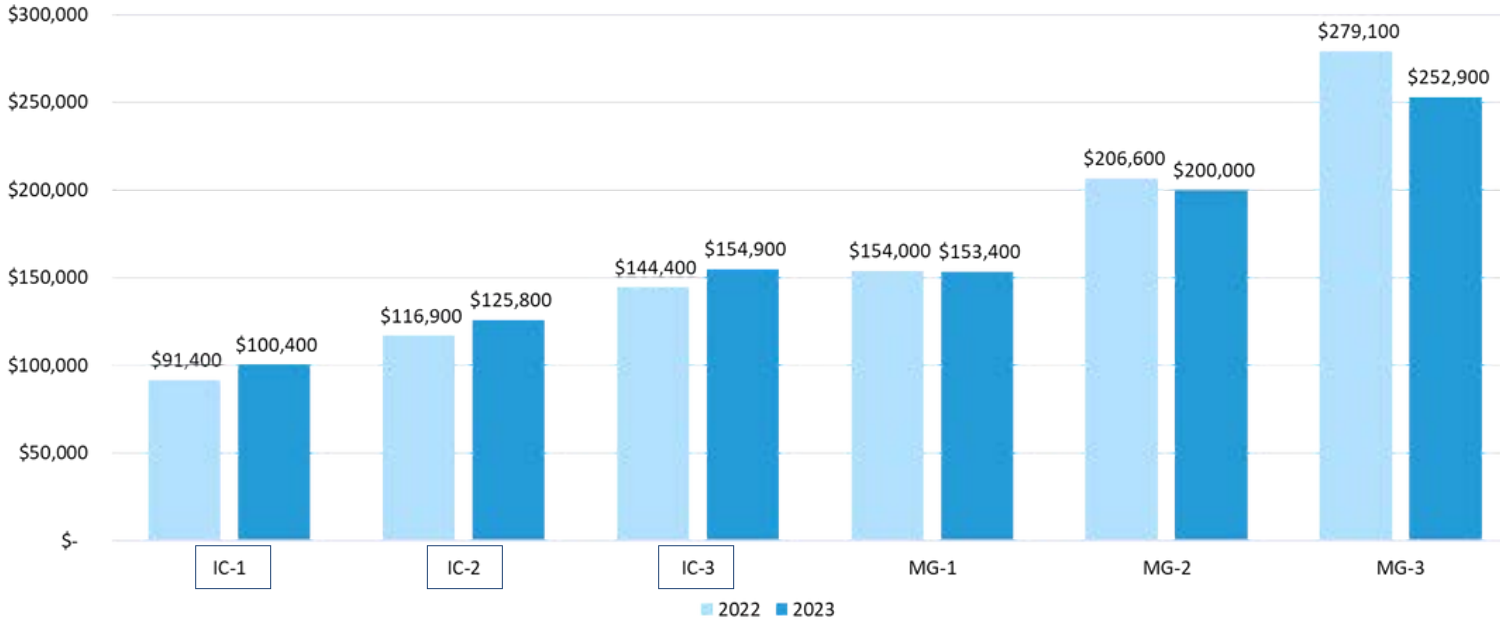
## 2023 Mean Base Salaries




*Consistent with our findings from previous reports, it appears that AI professionals may earn more base salary when compared to data science professionals across all job levels.*

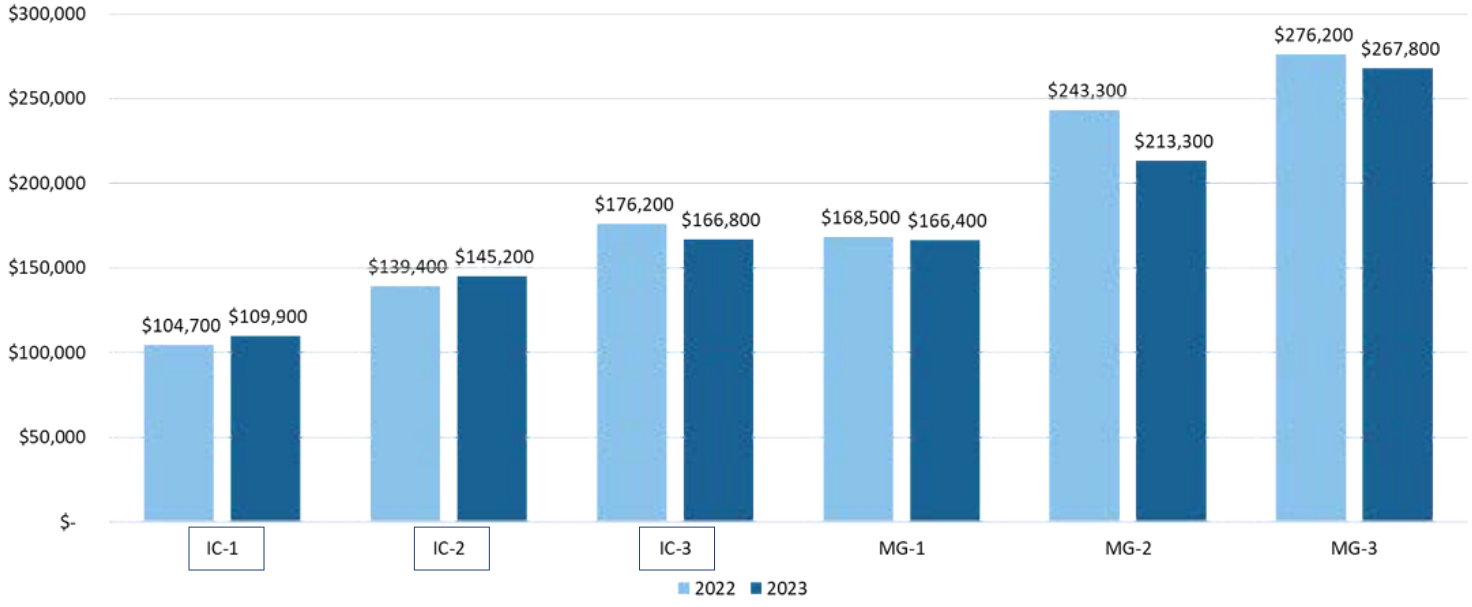
# 2023 BASELINE DATA

## Comparison of Data Science Mean Base Salaries




*Mean base salaries for data science professionals show statistically significant increases across all three individual contributor job levels IC-1, IC-2, IC-3. Although there seems to be a decrease in MG3 salaries, our testing indicates no significant decline. However, in order to confidently evaluate the changes in MG levels, a larger sample size is required.*

## Comparison of AI Professionals Mean Base Salaries




*The mean base salaries for AI Professionals exhibit a statistically significant increase in IC-1 and IC-2 levels, accompanied by a slight decrease in IC-3. Although there seems to be a decrease in salaries for MG-2 and MG-3 levels, our test results indicate no significant decline. Similarly, in order to confidently evaluate the changes in MG levels, a larger sample size is required.*

# 2023 BASELINE DATA

Changes in Base Salaries by Job Level for **Data Science Individual Contributors**

| Job Level | Year | 25% | Median | Mean | 75% | N |
|---|---|---|---|---|---|---|
| IC-1 | 2023 | $80,000 | $98,000 | $100,400 | $120,000 | 331 |
| | 2022 | $80,000 | $90,000 | $91,369 | $101,475 | 220 |
| | Change | 0% | +9% | +10% | +18% | |
| IC-2 | 2023 | $100,200 | $130,000 | $125,800 | $150,000 | 434 |
| | 2022 | $101,600 | $115,000 | $116,917 | $130,000 | 287 |
| | Change | -1% | +13% | +8% | +15% | |
| IC-3 | 2023 | $130,000 | $150,200 | $154,900 | $180,000 | 233 |
| | 2022 | $123,300 | $145,000 | $144,366 | $160,000 | 125 |
| | Change | +5% | +3% | +7% | +12.5% | |

Changes in Base Salaries by Job Level for **AI Professionals Individual Contributors**

| Job Level | Year | 25% | Median | Mean | 75% | N |
|---|---|---|---|---|---|---|
| IC-1 | 2023 | $91,400 | $110,200 | $109,900 | $125,225 | 142 |
| | 2022 | $95,000 | $105,000 | $104,700 | $115,200 | 118 |
| | Change | -4% | +5% | +5% | +9% | |
| IC-2 | 2023 | $130,000 | $145,000 | $145,200 | $160,150 | 175 |
| | 2022 | $125,000 | $140,000 | $139,400 | $150,025 | 224 |
| | Change | +4% | +4% | +4% | +7% | |
| IC-3 | 2023 | $141,400 | $170,000 | $166,800 | $190,000 | 106 |
| | 2022 | $160,000 | $175,000 | $176,200 | $200,000 | 79 |
| | Change | -11.6% | -3% | -5% | -5% | |

# 2023 BASELINE DATA

Changes in Base Salaries by Job Level for **Data Science Managers**

| Job Level | Year | 25% | Median | Mean | 75% | N |
|---|---|---|---|---|---|---|
| MG-1 | 2023 | $135,050 | $155,000 | $153,400 | $175,000 | 146 |
| | 2022 | $139,000 | $155,000 | $154,000 | $170,000 | 197 |
| | Change | -3% | 0% | -0.5% | +3% | |
| MG-2 | 2023 | $180,000 | $193,000 | $200,000 | $220,200 | 153 |
| | 2022 | $180,200 | $200,000 | $206,631 | $227,000 | 341 |
| | Change | -0% | -3.5% | -3% | -3% | |
| MG-3 | 2023 | $220,000 | $240,000 | $252,900 | $281,250 | 36 |
| | 2022 | $237,600 | $275,000 | $279,100 | $310,000 | 95 |
| | Change | -7% | -13% | -9% | -9% | |

Changes in Base Salaries by Job Level for **AI Professional Managers**

| Job Level | Year | 25% | Median | Mean | 75% | N |
|---|---|---|---|---|---|---|
| MG-1 | 2023 | $155,000 | $170,000 | $166,400 | $175,000 | 35 |
| | 2022 | $150,000 | $167,000 | $168,500 | $180,000 | 49 |
| | Change | +3% | +2% | -1% | -3% | |
| MG-2 | 2023 | $190,000 | $215,000 | $213,300 | $225,000 | 33 |
| | 2022 | $200,200 | $221,650 | $224,300 | $250,000 | 82 |
| | Change | -5% | -3% | -4% | -10% | |
| MG-3 | 2023 | $231,500 | $268,000 | $267,800 | $295,000 | 15 |
| | 2022 | $250,000 | $275,000 | $276,200 | $300,225 | 24 |
| | Change | -7% | -2.5% | -3% | -2% | |

# 2023 BONUS DATA

## Bonus Percentages for Data Science Professionals

| Job Level | 25% | Median | Mean | 75% |
|---|---|---|---|---|
| IC-1 | 10% | 12% | 13% | 15% |
| IC-2 | 8% | 10% | 13% | 15% |
| IC-3 | 10% | 14% | 17% | 20% |
| MG-1 | 12% | 15% | 16% | 20% |
| MG-2 | 18% | 20% | 23% | 25% |
| MG-3 | 20% | 25% | 25% | 30% |

## Bonus Percentages for AI Professionals

| Job Level | 25% | Median | Mean | 75% |
|---|---|---|---|---|
| IC-1 | 10% | 13% | 13% | 17% |
| IC-2 | 10% | 13% | 15% | 16% |
| IC-3 | 10% | 15% | 16% | 21% |
| MG-1 | 13% | 15% | 21% | 23% |
| MG-2 | 20% | 20% | 27% | 30% |
| MG-3 | 21% | 33% | 32% | 40% |

*The median bonus percentages for data science and AI professionals increase with higher job levels and as professionals move from IC to MG roles.*

SECTION 3

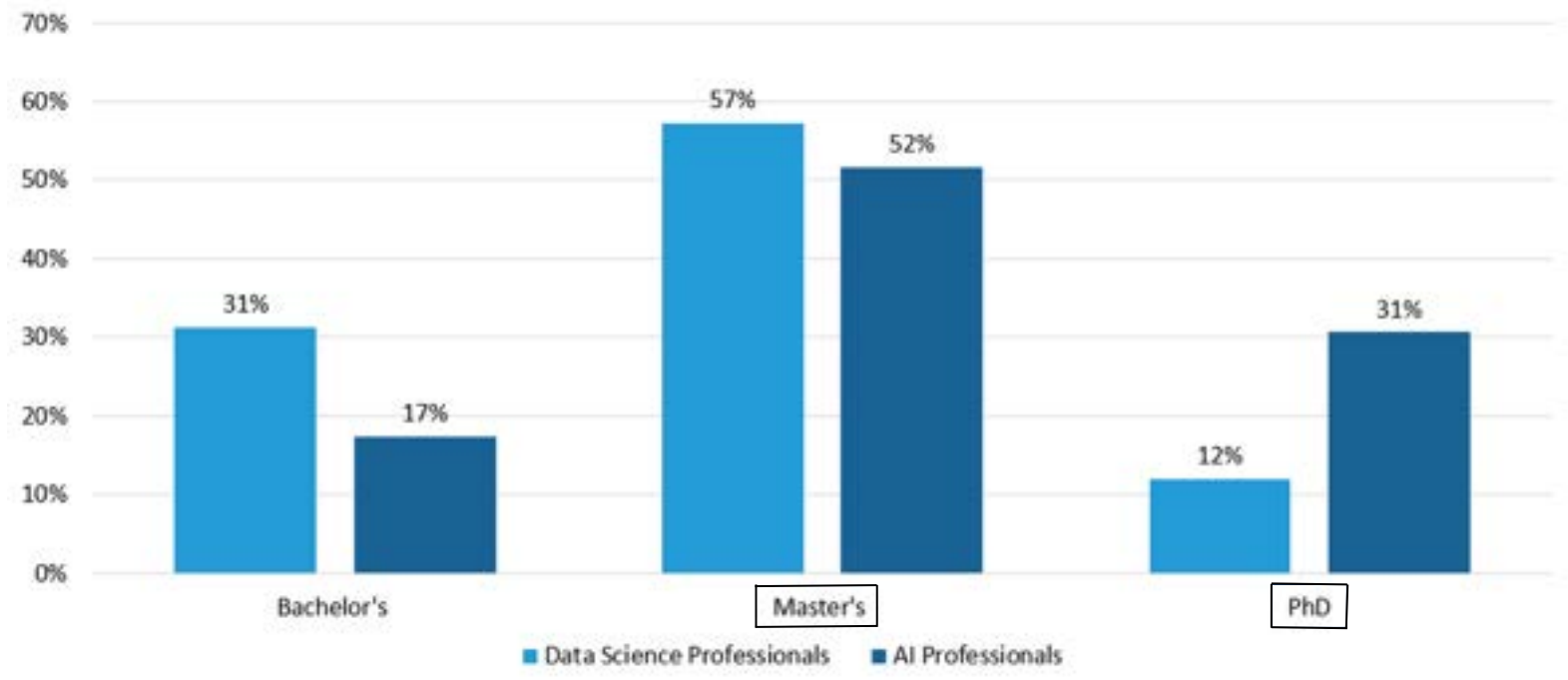
# DEMOGRAPHIC PROFILE

# EDUCATION: COMPARISON OF DEGREE LEVEL

- ***72% of all data scientists and AI professionals surveyed held an advanced degree.***
- *Education level has historically had a marked effect on salary.*
- *The proportion of AI Professionals with a Master's and/or PhD as their highest degree earned is higher than data scientists and is a statistically significant difference.*

COMPARISON OF DEGREE LEVEL *(for highest degree earned)*

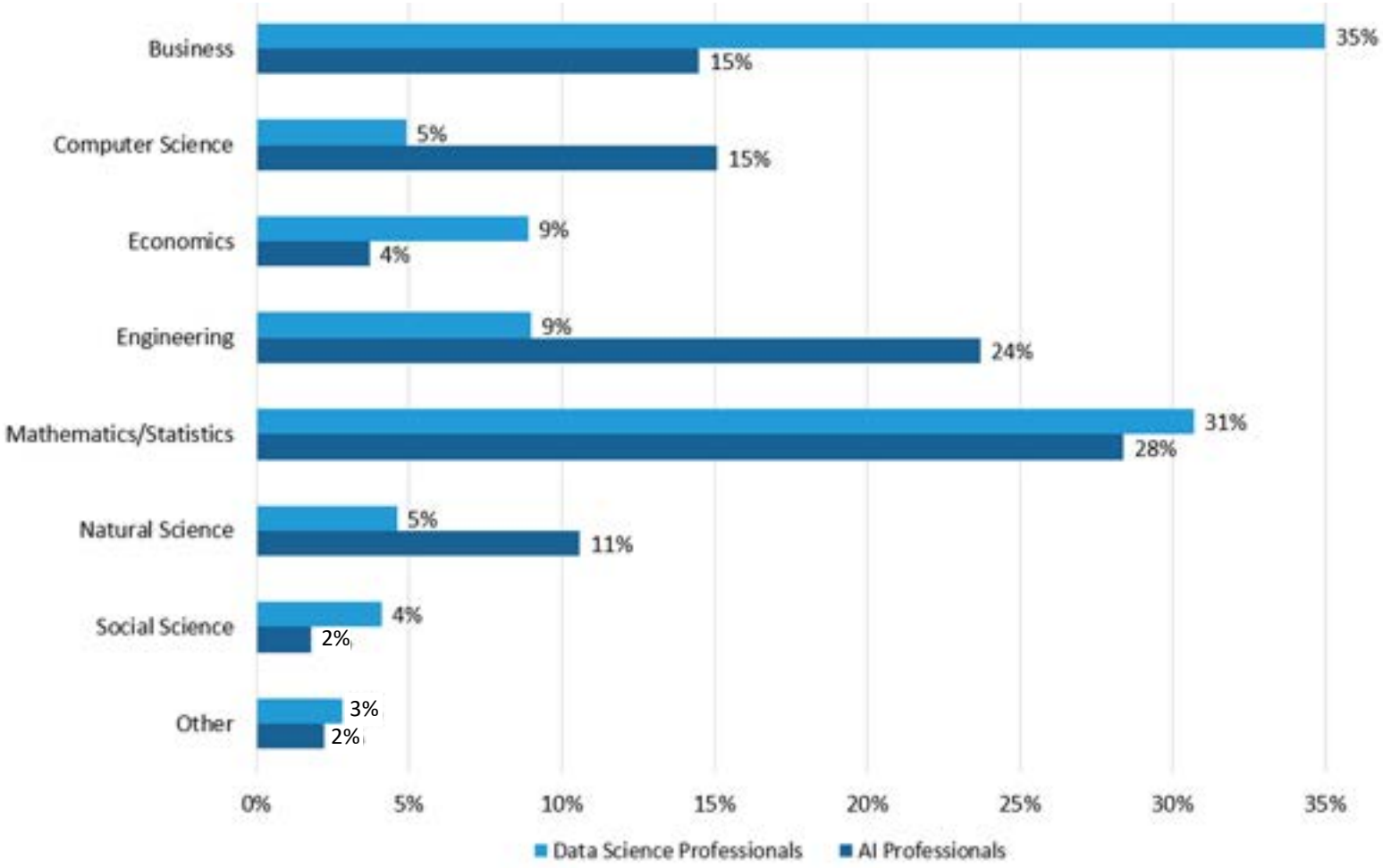
**Data Scientists vs. AI Professionals**



# EDUCATION: AREA OF REPORT

COMPARISON OF AREA OF report *(for highest degree earned)*

**Data Scientists vs. AI Professionals**




- *In line with previous year's reports, mathematics and business are the most popular area of report for data scientists.*
- *Engineering continues to gain prevalence among AI professionals.*

# EDUCATION: SALARIES BY JOB LEVEL

*Professionals with advanced degrees, especially those with PhDs, tend to earn higher salaries than others at the same job level as individual contributors. As managers increase in seniority and management responsibility, degree level has less of an impact on salary.*

## Base Salaries by Degree Level for Data Science Individual Contributors

| Job Level | Education | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| IC-1 | Bachelor's | $75,300 | $88,300 | $93,693 | $110,000 |
| | Master's | $80,200 | $100,000 | $100,883 | $120,000 |
| | PhD | $100,000 | $119,000 | $121,623 | $137,600 |
| IC-2 | Bachelor's | $95,150 | $110,200 | $115,176 | $130,200 |
| | Master's | $106,650 | $130,000 | $127,637 | $150,000 |
| | PhD | $122,500 | $150,000 | $144,755 | $170,000 |
| IC-3 | Bachelor's | $120,000 | $150,000 | $150,205 | $170,000 |
| | Master's | $130,000 | $158,000 | $156,078 | $180,000 |
| | PhD | $133,600 | $160,000 | $159,357 | $180,050 |

## Base Salaries by Degree Level for Data Science Managers

| Job Level | Education | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| MG-1 | Bachelor's | $130,200 | $145,200 | $149,819 | $168,000 |
| | Master's | $140,000 | $159,000 | $154,609 | $170,075 |
| | PhD | $150,000 | $180,000 | $166,154 | $180,000 |
| MG-2 | Bachelor's | $180,000 | $200,000 | $204,016 | $225,050 |
| | Master's | $175,000 | $190,000 | $196,546 | $210,000 |
| | PhD | $180,000 | $195,000 | $198,184 | $210,000 |
| MG-3 | Bachelor's | $210,250 | $230,000 | $237,661 | $240,000 |
| | Master's | $220,150 | $260,000 | $260,433 | $272,750 |
| | PhD | $281,250 | $300,000 | $283,333 | $300,000 |

# EDUCATION: SALARIES BY JOB LEVEL

## Base Salaries by Degree Level for AI Professionals Individual Contributors

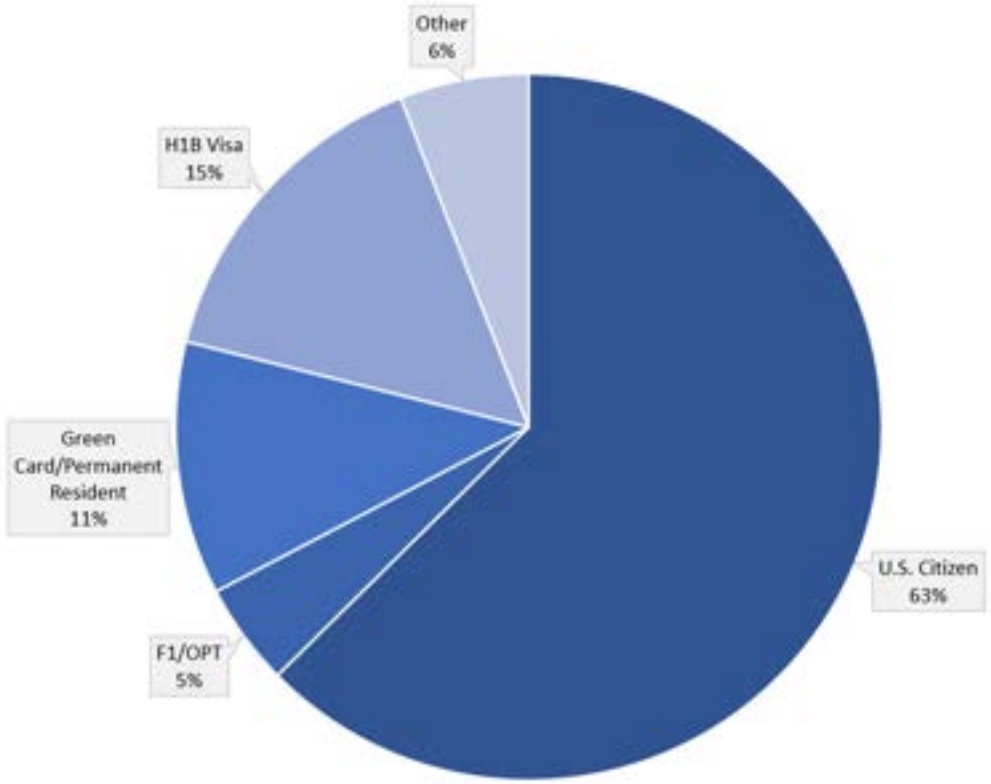
| Job Level | Education | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| IC-1 | Bachelor's | $88,750 | $95,100 | $101,071 | $115,000 |
| | Master's | $91,250 | $115,100 | $110,731 | $130,000 |
| | PhD | $100,000 | $117,650 | $114,594 | $128,825 |
| IC-2 | Bachelor's | $130,000 | $135,000 | $138,320 | $154,000 |
| | Master's | $130,000 | $140,000 | $142,525 | $160,000 |
| | PhD | $130,250 | $150,100 | $152,768 | $170,000 |
| IC-3 | Bachelor's | $150,000 | $160,000 | $170,333 | $195,000 |
| | Master's | $140,200 | $160,200 | $165,400 | $182,650 |
| | PhD | $142,500 | $175,000 | $167,267 | $187,600 |

## Base Salaries by Degree Level for AI Professionals Managers

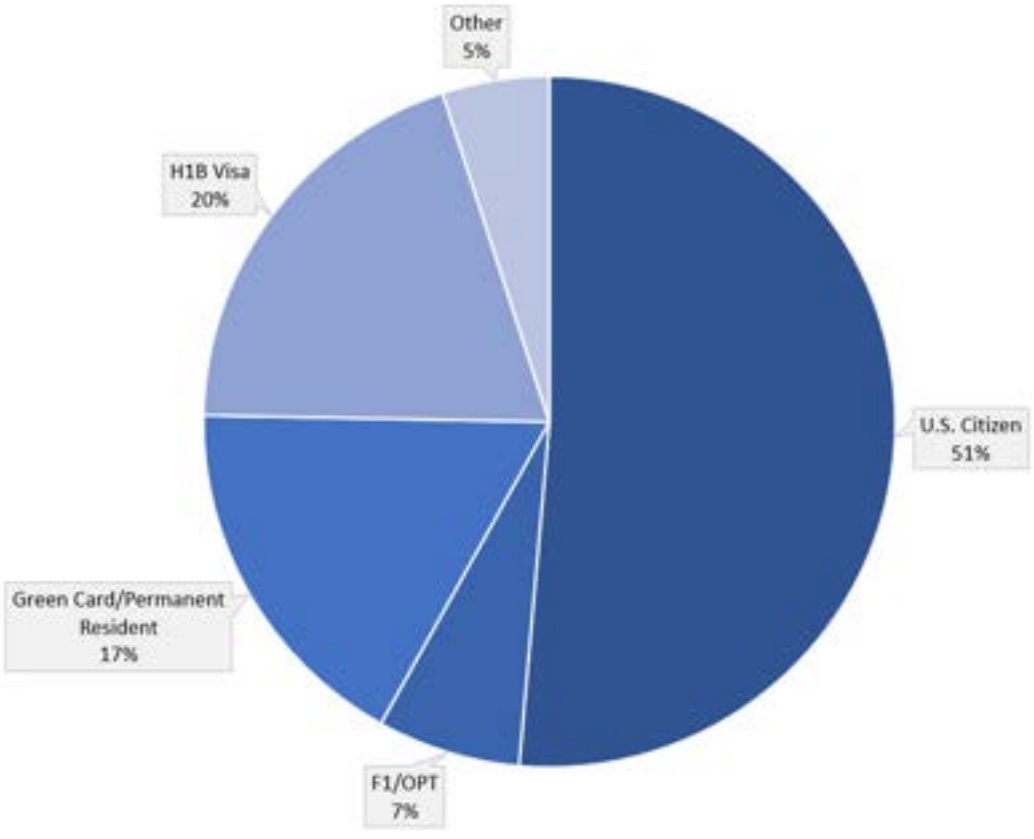
| Job Level | Education | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| MG-1 | Master's | $133,000 | $152,750 | $151,228 | $169,500 |
| | PhD | $132,500 | $150,000 | $149,200 | $160,000 |
| MG-2 | Master's | $169,500 | $190,000 | $188,708 | $200,250 |
| | PhD | $184,000 | $200,000 | $196,444 | $216,500 |
| MG-3 | Master's | $200,000 | $250,000 | $236,647 | $265,000 |
| | PhD | $231,250 | $257,500 | $256,591 | $296,250 |

# CANDIDATE RESIDENCY STATUS

## Data Science Residency Status Breakdown




## AI Professionals Residency Status Breakdown



# DATA SCIENTISTS SALARIES BY REGION

| Job Level | Region | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| IC-1 | Midwest | $75,300 | $85,300 | $90,343 | $100,000 |
| | Mountain | $95,000 | $105,000 | $110,195 | $123,750 |
| | Northeast | $83,500 | $105,000 | $106,050 | $130,000 |
| | Southeast | $80,000 | $90,000 | $92,877 | $105,300 |
| | West Coast | $100,000 | $110,100 | $115,431 | $130,000 |
| IC-2 | Midwest | $90,000 | $108,000 | $114,231 | $135,300 |
| | Mountain | $110,000 | $130,000 | $128,308 | $150,000 |
| | Northeast | $110,150 | $130,200 | $131,374 | $150,000 |
| | Southeast | $95,225 | $117,650 | $120,133 | $146,475 |
| | West Coast | $107,750 | $130,000 | $129,726 | $140,000 |
| IC-3 | Midwest | $110,300 | $140,000 | $139,568 | $160,000 |
| | Mountain | $125,150 | $150,000 | $145,593 | $165,100 |
| | Northeast | $137,300 | $160,200 | $161,502 | $180,000 |
| | Southeast | $140,000 | $145,100 | $152,918 | $175,000 |
| | West Coast | $150,000 | $175,000 | $171,705 | $200,000 |

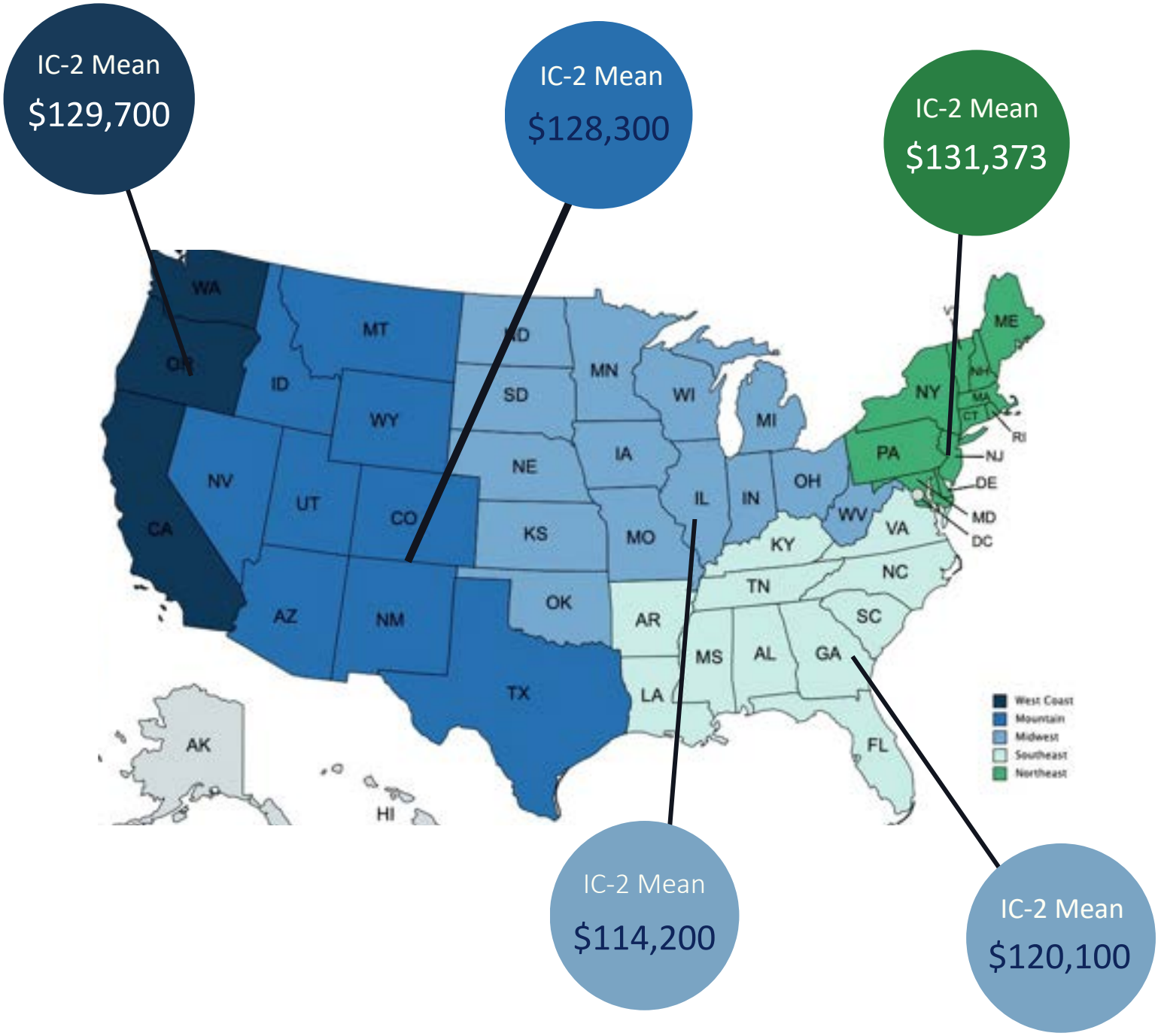
| Job Level | Region | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| MG-1 | Midwest | $127,500 | $162,500 | $154,256 | $176,000 |
| | Mountain | $141,650 | $153,750 | $155,213 | $171,000 |
| | Northeast | $130,200 | $150,150 | $151,224 | $170,050 |
| | Southeast | $138,750 | $152,500 | $152,525 | $166,250 |
| | West Coast | $140,050 | $160,000 | $159,535 | $180,000 |
| MG-2 | Midwest | $182,650 | $200,000 | $204,300 | $225,000 |
| | Mountain | $170,000 | $180,000 | $181,127 | $190,000 |
| | Northeast | $180,000 | $197,500 | $198,277 | $220,000 |
| | Southeast | $180,200 | $185,000 | $201,569 | $220,000 |
| | West Coast | $180,000 | $187,500 | $206,021 | $239,500 |
| MG-3 | Midwest | $222,500 | $240,000 | $240,530 | $268,750 |
| | Mountain | $214,000 | $250,000 | $255,840 | $286,000 |
| | Northeast | $232,500 | $255,000 | $253,333 | $292,500 |
| | Southeast | $230,000 | $230,000 | $268,040 | $300,000 |
| | West Coast | $127,500 | $162,500 | $154,256 | $176,000 |

# AI PROFESSIONALS SALARIES BY REGION

| Job Level | Region | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| IC-1 | Midwest | $90,000 | $100,000 | $103,232 | $118,825 |
| | Mountain | $85,000 | $115,000 | $110,000 | $128,750 |
| | Northeast | $90,000 | $115,000 | $110,391 | $130,000 |
| | Southeast | $100,000 | $110,150 | $111,075 | $121,475 |
| | West Coast | $100,000 | $115,000 | $115,424 | $135,000 |
| IC-2 | Midwest | $125,000 | $130,000 | $138,148 | $152,000 |
| | Mountain | $130,000 | $140,000 | $141,188 | $150,000 |
| | Northeast | $130,050 | $150,000 | $147,789 | $165,150 |
| | Southeast | $130,300 | $145,000 | $145,086 | $150,225 |
| | West Coast | $125,000 | $145,000 | $145,177 | $165,100 |
| IC-3 | Midwest | $125,000 | $150,000 | $143,869 | $160,000 |
| | Mountain | $126,250 | $147,500 | $153,800 | $176,000 |
| | Northeast | $155,000 | $170,200 | $172,255 | $180,200 |
| | Southeast | $126,250 | $140,000 | $139,167 | $157,500 |
| | West Coast | $173,750 | $195,000 | $182,508 | $200,000 |

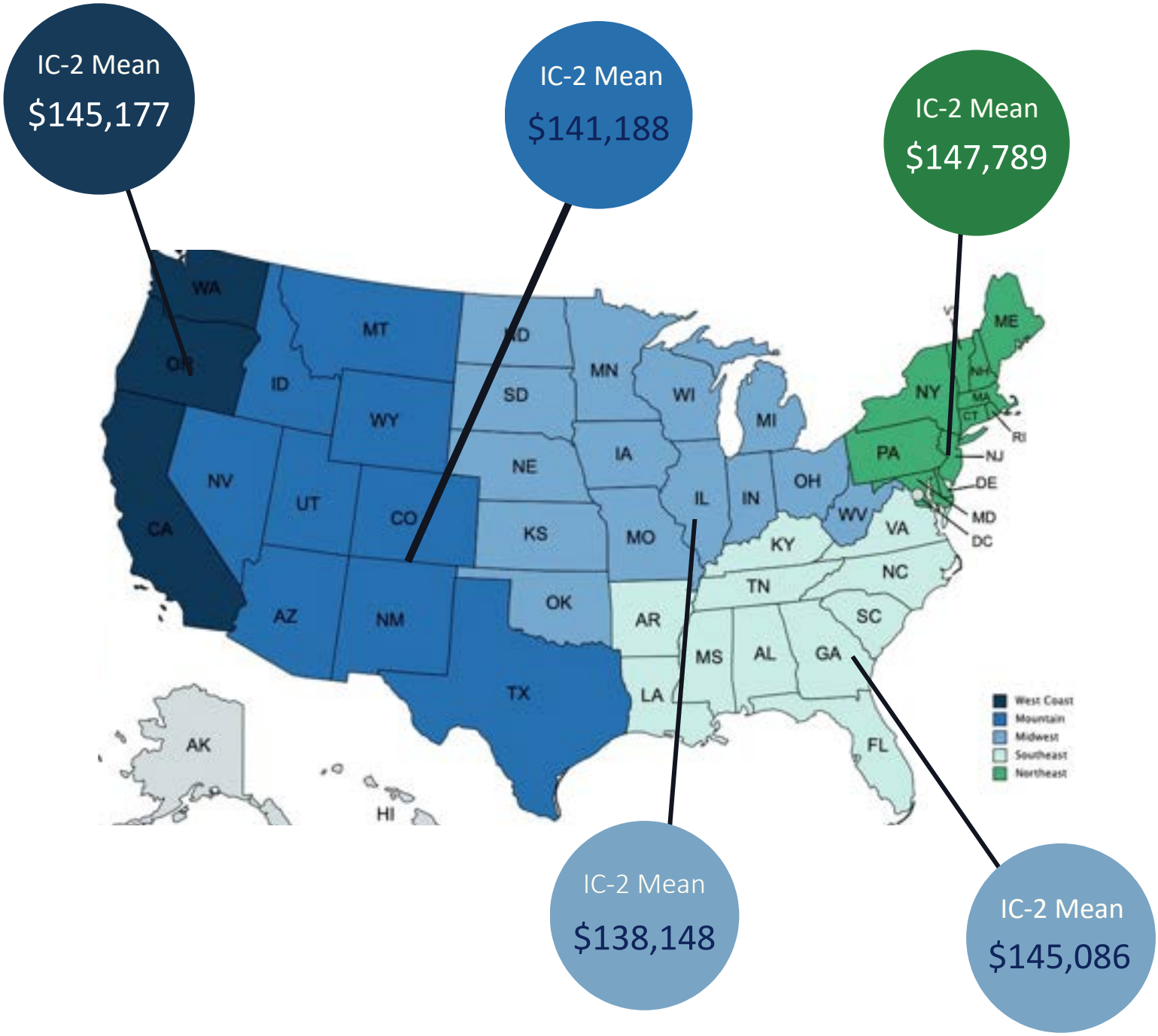
| Job Level | Region | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| MG-1 | Midwest | $147,500 | $152,500 | $156,913 | $168,825 |
| | Mountain | $157,650 | $170,100 | $172,550 | $185,000 |
| | Northeast | $162,500 | $170,000 | $168,000 | $175,000 |
| | Southeast | $162,500 | $175,000 | $175,000 | $187,500 |
| | West Coast | $162,500 | $172,500 | $168,333 | $175,000 |
| MG-2 | Midwest | $195,000 | $200,000 | $202,614 | $210,000 |
| | Mountain | $175,000 | $180,000 | $176,667 | $180,000 |
| | Northeast | $205,000 | $215,200 | $214,053 | $222,600 |
| | Southeast | $180,000 | $180,000 | $180,000 | $180,000 |
| | West Coast | $235,100 | $250,000 | $242,886 | $262,500 |
| MG-3 | Midwest | $237,500 | $262,500 | $250,000 | $275,000 |
| | Mountain | $250,000 | $250,000 | $250,000 | $250,000 |
| | Northeast | $257,250 | $295,000 | $288,525 | $301,400 |
| | Southeast | $238,000 | $238,000 | $238,000 | $238,000 |
| | West Coast | $220,000 | $220,000 | $220,000 | $220,000 |

# DATA SCIENCE IC-2 SALARIES BY REGION




*Mean base salaries for IC-2 data science professionals from West Coast, Mountain, and Northeast are all higher compared to the Midwest region base salaries. Year over year, Mountain region has leveled with the West Coast and Northeast, we believe this is due to remote working trends and growing tech hubs in Texas, Arizona, Colorado and Utah.*

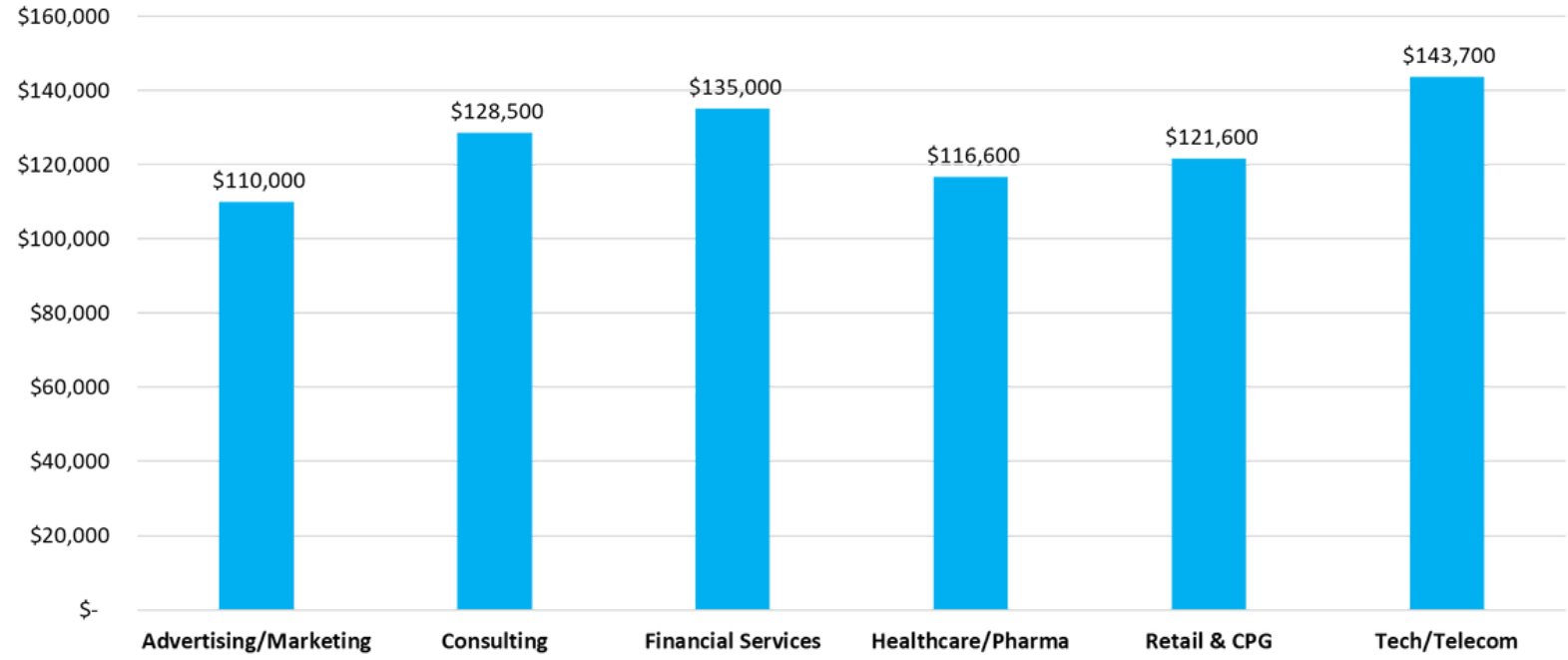
# AI PROFESSIONALS IC-2 SALARIES BY REGION




*Mean base salaries for IC-2 AI professionals are similar across the regions with a mean around $140,000.*

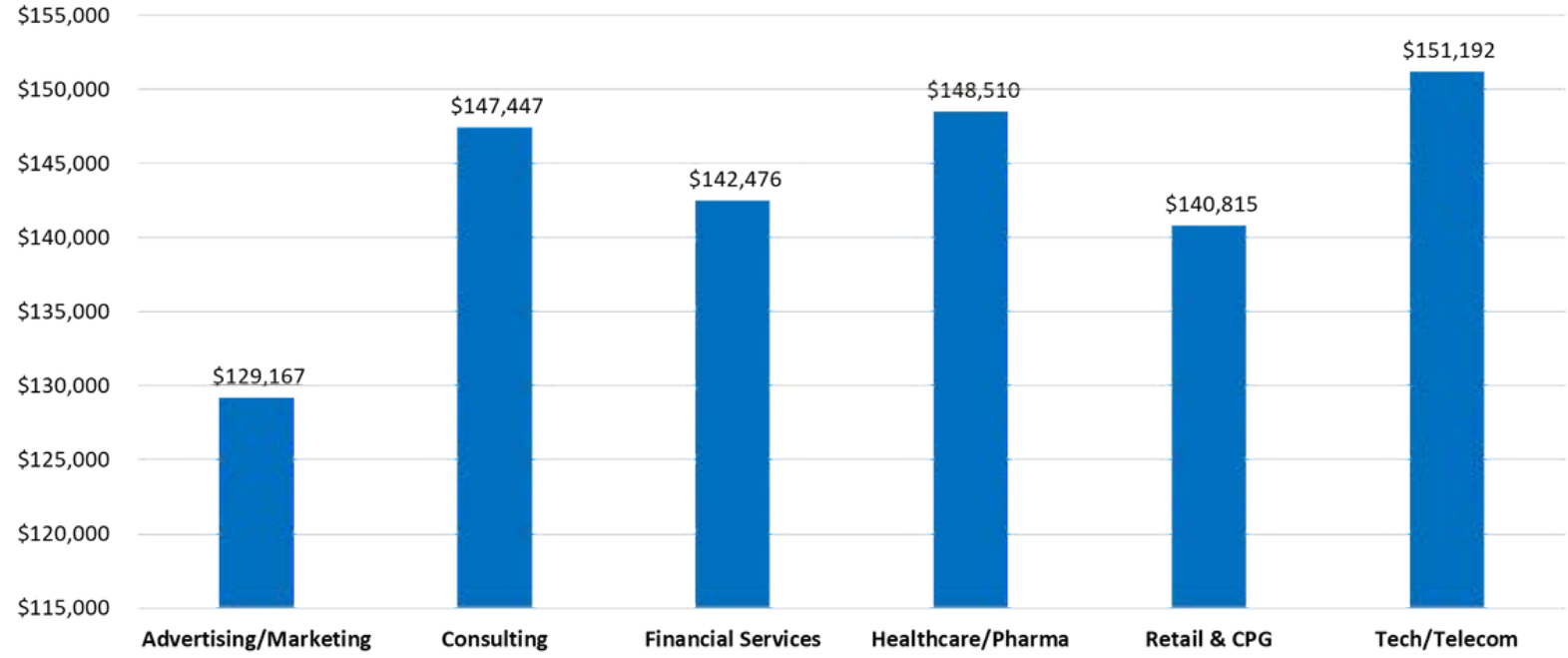
# INDUSTRY BREAKDOWNS

## Comparison of Data Science IC-2 Mean Base Salaries Across Various Industries




*In line with previous years' reports, tech, financial services and consulting seem to have higher levels of mean base salaries for data scientists at the IC-2 level.*

## Comparison of AI Professionals IC-2 Mean Base Salaries Across Various Industries




*For AI Professionals at the IC-2 level, outside of Advertising/Marketing, mean base salaries remain consistent irrespective of industry.*

# INDUSTRY BREAKDOWNS

## Base Salaries by Job Level and Industry for Data Science Individual Contributors

| Job Level | Industry* | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| IC-1 | Advertising/Marketing | $72,650 | $80,000 | $84,878 | $95,000 |
| | Consulting | $80,250 | $100,000 | $102,718 | $120,050 |
| | Financial Services | $85,000 | $108,000 | $106,783 | $125,150 |
| | Healthcare/Pharma | $85,300 | $100,000 | $100,517 | $112,500 |
| | Retail & CPG | $75,200 | $90,300 | $91,455 | $100,000 |
| | Tech/Telecom/Gaming | $95,300 | $110,000 | $114,729 | $133,950 |
| | Corporate – Other | $83,500 | $100,000 | $102,116 | $120,000 |
| IC-2 | Advertising/Marketing | $94,050 | $110,000 | $109,742 | $126,250 |
| | Consulting | $105,075 | $130,200 | $128,480 | $150,000 |
| | Financial Services | $115,075 | $135,000 | $134,906 | $150,200 |
| | Healthcare/Pharma | $89,650 | $120,000 | $116,549 | $137,650 |
| | Retail & CPG | $97,300 | $125,000 | $121,586 | $140,000 |
| | Tech/Telecom/Gaming | $125,000 | $145,100 | $143,709 | $150,225 |
| | Corporate – Other | $100,000 | $120,250 | $122,463 | $140,000 |
| IC-3 | Advertising/Marketing | $106,475 | $120,150 | $129,800 | $153,300 |
| | Consulting | $140,000 | $177,500 | $172,200 | $205,000 |
| | Financial Services | $140,000 | $160,000 | $161,916 | $175,000 |
| | Healthcare/Pharma | $121,400 | $146,000 | $148,460 | $167,550 |
| | Retail & CPG | $115,000 | $150,000 | $139,129 | $160,000 |
| | Tech/Telecom/Gaming | $140,225 | $160,100 | $160,622 | $180,000 |
| | Corporate – Other | $125,000 | $150,000 | $153,425 | $180,000 |

# INDUSTRY BREAKDOWNS

## Base Salaries by Job Level and Industry for Data Science Managers

| Job Level | Industry* | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| MG-1 | Advertising/Marketing | $130,200 | $145,000 | $150,589 | $165,000 |
| | Consulting | $142,500 | $163,500 | $158,357 | $173,750 |
| | Financial Services | $148,800 | $160,100 | $162,791 | $180,000 |
| | Healthcare/Pharma | $130,000 | $150,000 | $147,609 | $160,000 |
| | Retail & CPG | $145,150 | $156,300 | $152,320 | $165,750 |
| | Tech/Telecom/Gaming | $143,800 | $152,550 | $155,858 | $172,500 |
| | Corporate – Other | $130,000 | $140,200 | $146,500 | $170,050 |
| MG-2 | Advertising/Marketing | $168,800 | $185,100 | $203,488 | $250,000 |
| | Consulting | $170,000 | $200,000 | $196,506 | $200,000 |
| | Financial Services | $180,050 | $200,000 | $199,179 | $210,000 |
| | Healthcare/Pharma | $180,200 | $192,600 | $207,143 | $218,900 |
| | Retail & CPG | $200,000 | $210,000 | $208,277 | $220,200 |
| | Tech/Telecom/Gaming | $180,000 | $192,500 | $206,527 | $223,800 |
| | Corporate – Other | $175,000 | $185,000 | $191,200 | $220,000 |
| MG-3 | Advertising/Marketing | $222,500 | $252,500 | $250,050 | $293,750 |
| | Consulting | $205,050 | $210,100 | $210,100 | $215,150 |
| | Financial Services | $221,300 | $235,000 | $258,340 | $292,500 |
| | Healthcare/Pharma | $205,300 | $223,500 | $243,050 | $261,250 |
| | Retail & CPG | $252,500 | $275,000 | $268,333 | $287,500 |
| | Tech/Telecom/Gaming | $225,000 | $250,000 | $250,000 | $275,000 |
| | Corporate – Other | $240,000 | $250,000 | $258,000 | $270,000 |

# INDUSTRY BREAKDOWNS

## Base Salaries by Job Level and Industry for AI Professional Individual Contributors

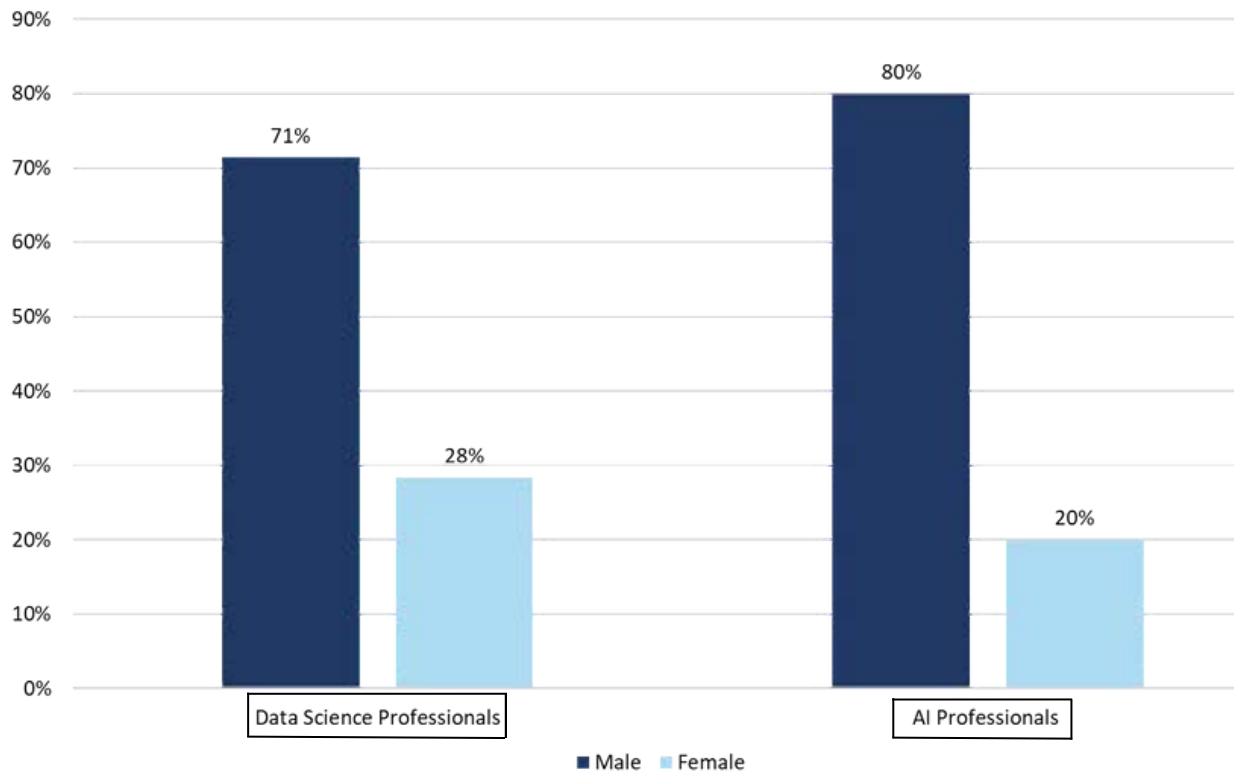
| Job Level | Industry* | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| IC-1 | Advertising/Marketing | $100,000 | $105,000 | $109,444 | $120,000 |
| | Consulting | $100,000 | $110,000 | $109,118 | $117,650 |
| | Financial Services | $85,300 | $100,000 | $102,385 | $120,000 |
| | Healthcare/Pharma | $96,250 | $115,000 | $111,927 | $127,500 |
| | Retail & CPG | $90,050 | $100,100 | $104,250 | $125,000 |
| | Tech/Telecom/Gaming | $92,500 | $110,250 | $106,850 | $120,075 |
| | Corporate – Other | $100,000 | $120,000 | $112,683 | $130,000 |
| IC-2 | Advertising/Marketing | $122,500 | $135,000 | $129,167 | $143,750 |
| | Consulting | $130,000 | $150,000 | $147,447 | $165,100 |
| | Financial Services | $130,000 | $140,000 | $142,476 | $150,000 |
| | Healthcare/Pharma | $135,000 | $150,000 | $148,510 | $160,000 |
| | Retail & CPG | $120,000 | $140,000 | $140,815 | $160,000 |
| | Tech/Telecom/Gaming | $130,000 | $150,000 | $151,192 | $170,000 |
| | Corporate – Other | $130,000 | $140,000 | $142,183 | $154,750 |
| IC-3 | Advertising/Marketing | $200,000 | $210,000 | $210,000 | $220,000 |
| | Consulting | $145,050 | $170,000 | $168,700 | $185,000 |
| | Financial Services | $150,000 | $155,000 | $166,457 | $165,100 |
| | Healthcare/Pharma | $117,500 | $132,750 | $138,375 | $150,000 |
| | Retail & CPG | $150,000 | $160,000 | $163,200 | $185,000 |
| | Tech/Telecom/Gaming | $160,200 | $180,000 | $176,708 | $187,550 |
| | Corporate – Other | $135,000 | $170,200 | $166,848 | $200,000 |

# INDUSTRY BREAKDOWNS

## Base Salaries by Job Level and Industry for AI Professional Managers

| Job Level | Industry* | Base Salary | | | |
|---|---|---|---|---|---|
| | | 25% | Median | Mean | 75% |
| MG-1 | Advertising/Marketing | $130,200 | $145,000 | $150,589 | $165,000 |
| | Consulting | $142,500 | $163,500 | $158,357 | $173,750 |
| | Financial Services | $148,800 | $160,100 | $162,791 | $180,000 |
| | Healthcare/Pharma | $130,000 | $150,000 | $147,609 | $160,000 |
| | Retail & CPG | $145,150 | $156,300 | $152,320 | $165,750 |
| | Tech/Telecom/Gaming | $143,800 | $152,550 | $155,858 | $172,500 |
| | Corporate – Other | $130,000 | $140,200 | $146,500 | $170,050 |
| MG-2 | Advertising/Marketing | $168,800 | $185,100 | $203,488 | $250,000 |
| | Consulting | $170,000 | $200,000 | $196,506 | $200,000 |
| | Financial Services | $180,050 | $200,000 | $199,179 | $210,000 |
| | Healthcare/Pharma | $180,200 | $192,600 | $207,143 | $218,900 |
| | Retail & CPG | $200,000 | $210,000 | $208,277 | $220,200 |
| | Tech/Telecom/Gaming | $180,000 | $192,500 | $206,527 | $223,800 |
| | Corporate – Other | $175,000 | $185,000 | $191,200 | $220,000 |
| MG-3 | Advertising/Marketing | $222,500 | $252,500 | $250,050 | $293,750 |
| | Consulting | $205,050 | $210,100 | $210,100 | $215,150 |
| | Financial Services | $221,300 | $235,000 | $258,340 | $292,500 |
| | Healthcare/Pharma | $205,300 | $223,500 | $243,050 | $261,250 |
| | Retail & CPG | $252,500 | $275,000 | $268,333 | $287,500 |
| | Tech/Telecom/Gaming | $225,000 | $250,000 | $250,000 | $275,000 |
| | Corporate – Other | $240,000 | $250,000 | $258,000 | $270,000 |

# GENDER BREAKDOWNS: DATA SCIENCE & AI SAMPLES




## Data Science

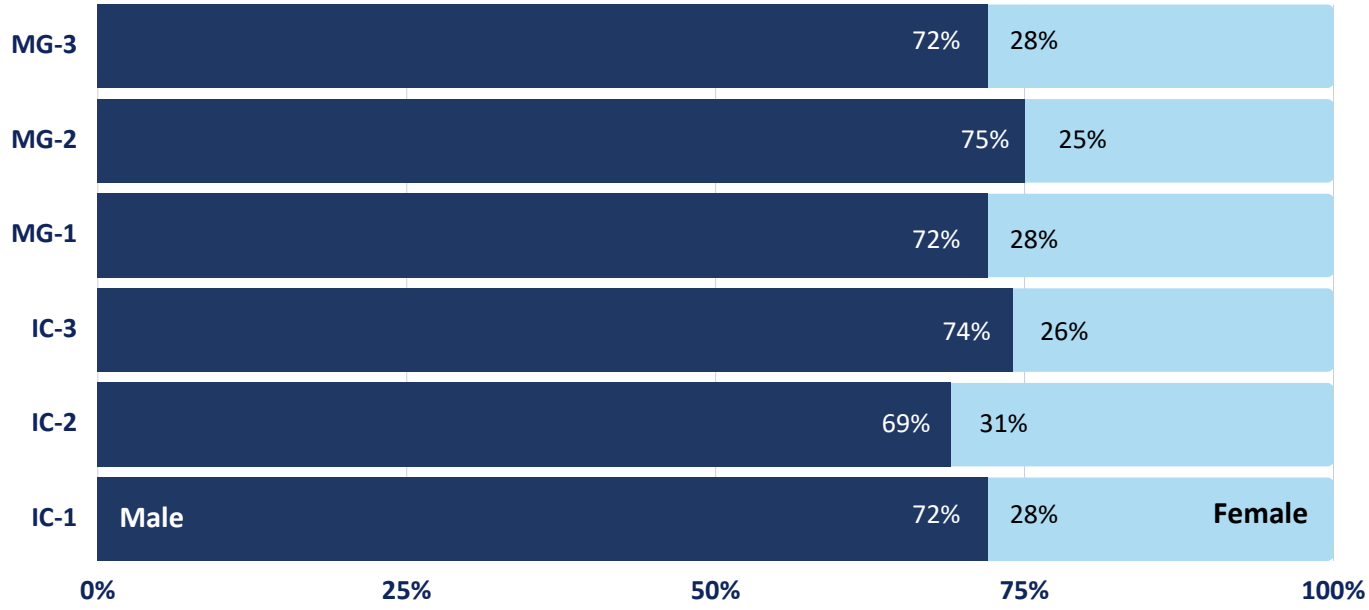
*For Data Scientists, this year's sample was 71% male and 28% female, showing a slight increase in female representation. In 2022, the sample was 76% male and 24% female.*

## AI Professionals

*For AI Professionals, this year's sample was 80% men and 20% women showing no change from 2022. Women continue to make gradual inroads among AI Professionals, but more male candidates are also attracted to the discipline so demographic shifts have been gradual.*

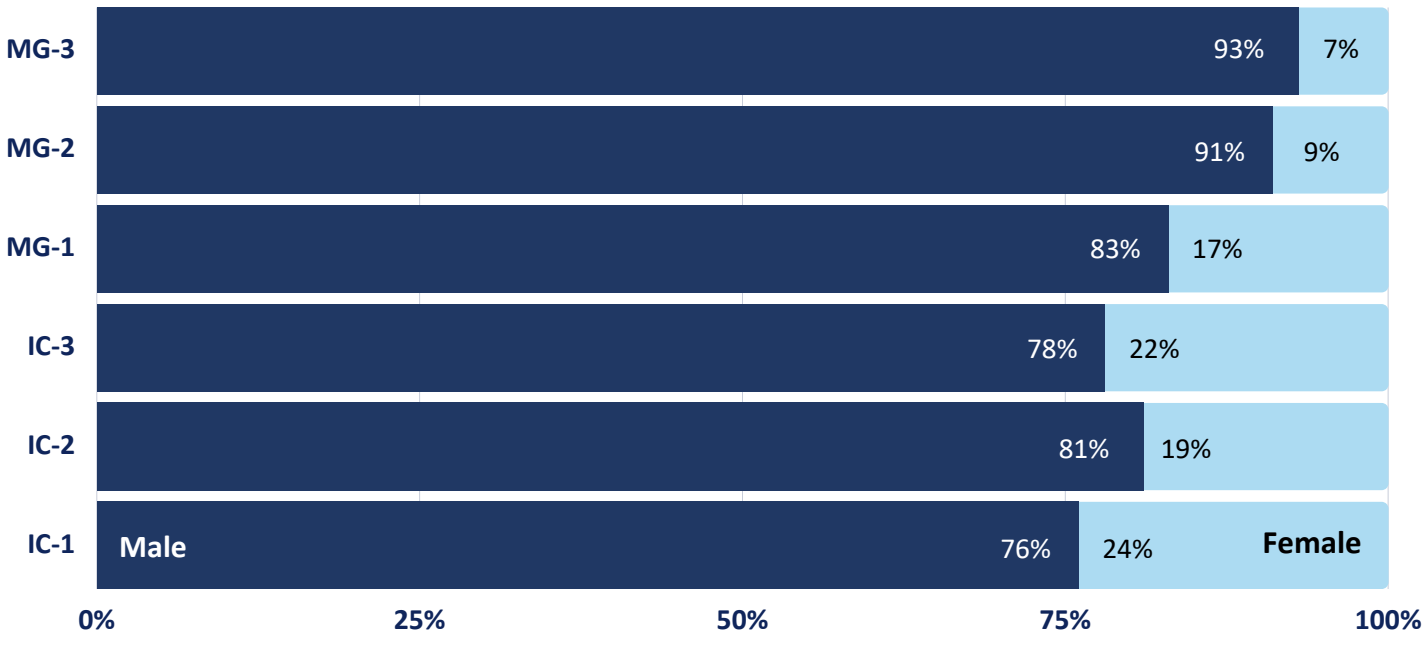
# DISTRIBUTION OF DATA SCIENTISTS & AI PROFESSIONALS BY GENDER AND JOB LEVEL

## Data Scientist Distribution by Gender and Job Level

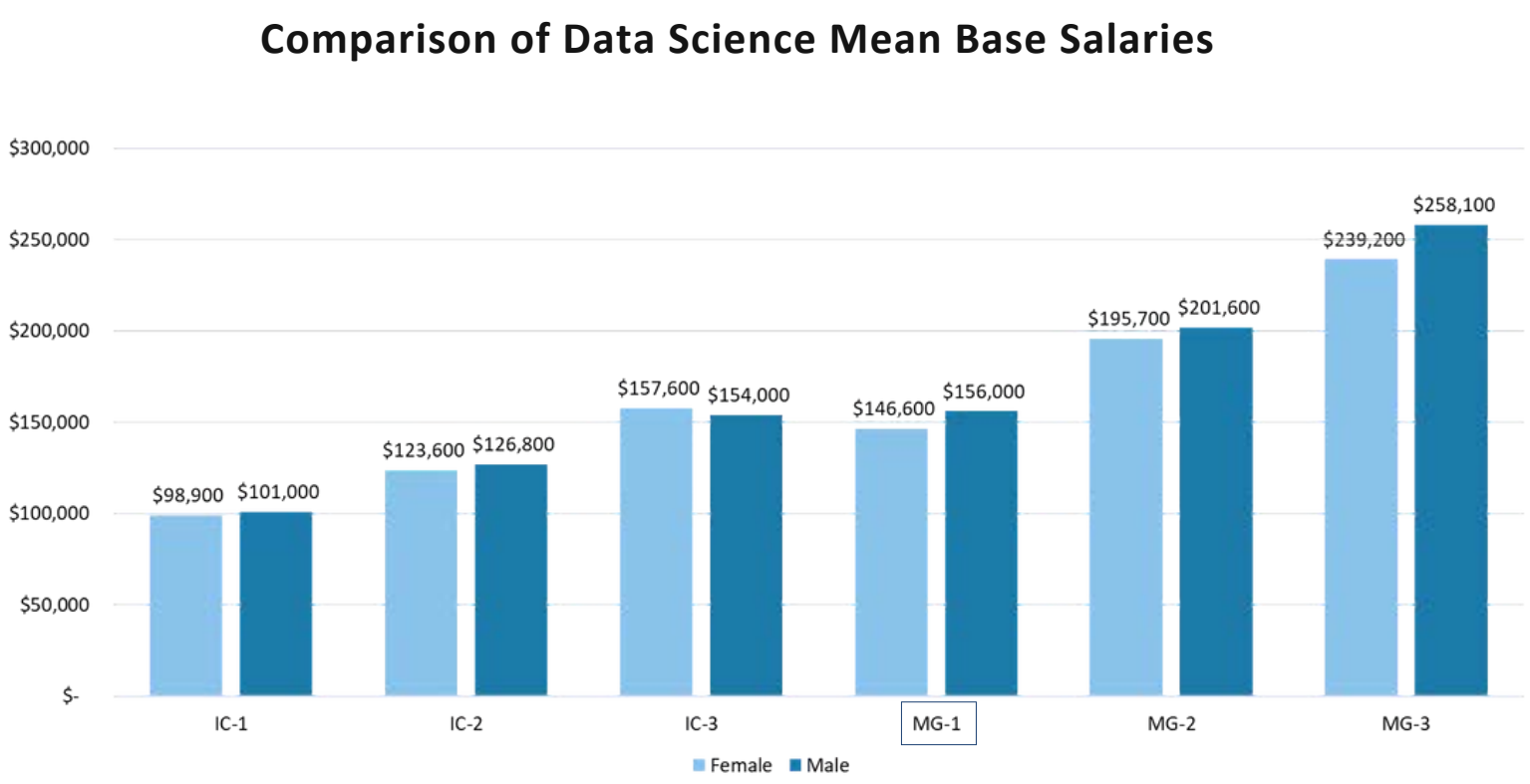



*Similarly to previous years, the proportion of females among Data Scientists and AI Professionals is highest at the junior levels. Women become less prevalent among high-level individual contributors and senior managers.*

## AI Professional Distribution by Gender and Job Level



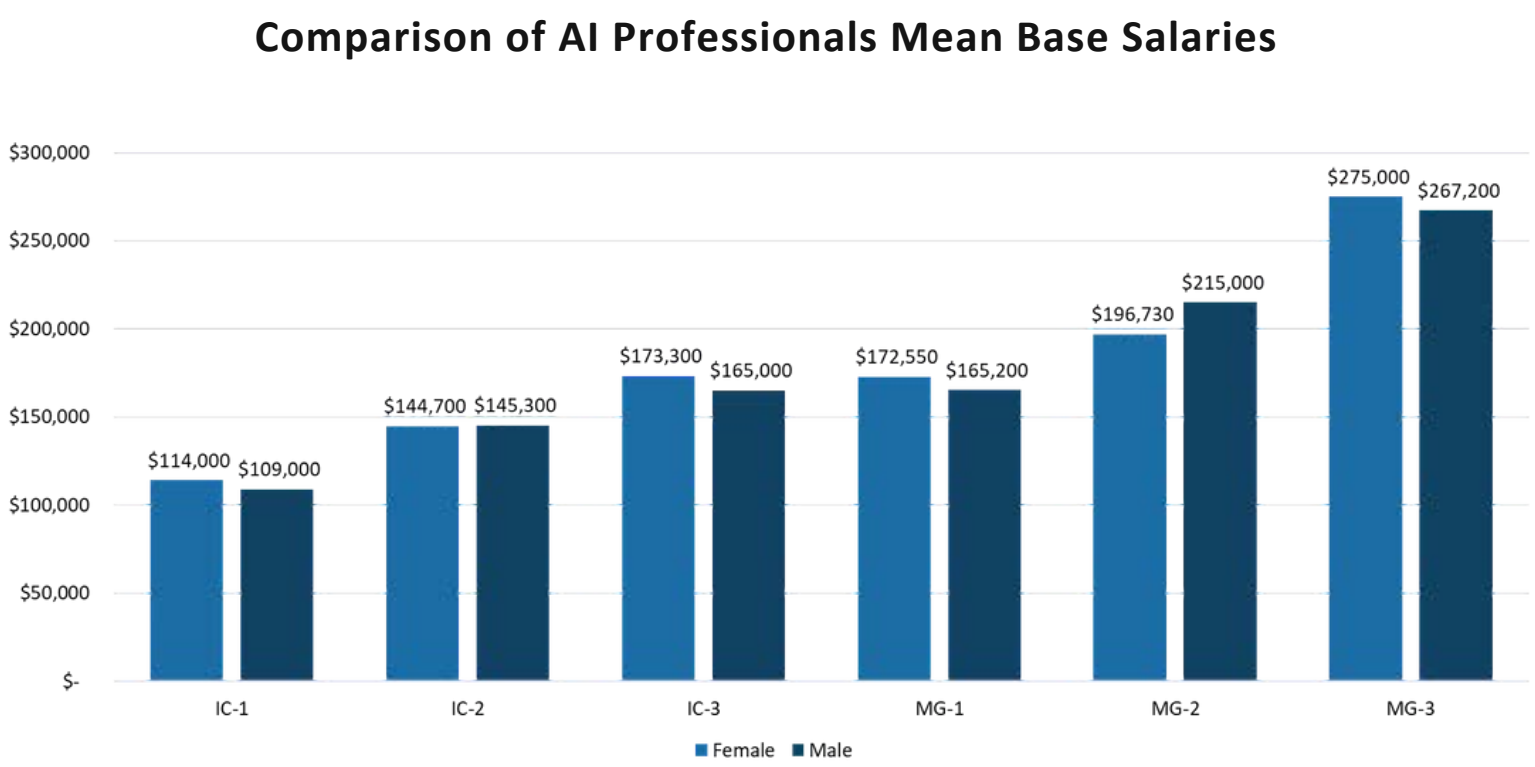
# COMPARISON OF DATA SCIENCE MEAN BASE SALARIES BY GENDER




*Base salaries for both males and females in Data Science are generally comparable across all individual contributor and manager levels, except for MG-1, where males continue to earn higher salaries than their female counterparts.*

*Note - The sample size for women in data science are relatively small at the higher manager levels and thus, it is difficult to determine if the differences are significant.*

# COMPARISON OF DATA SCIENCE MEAN BASE SALARIES BY GENDER

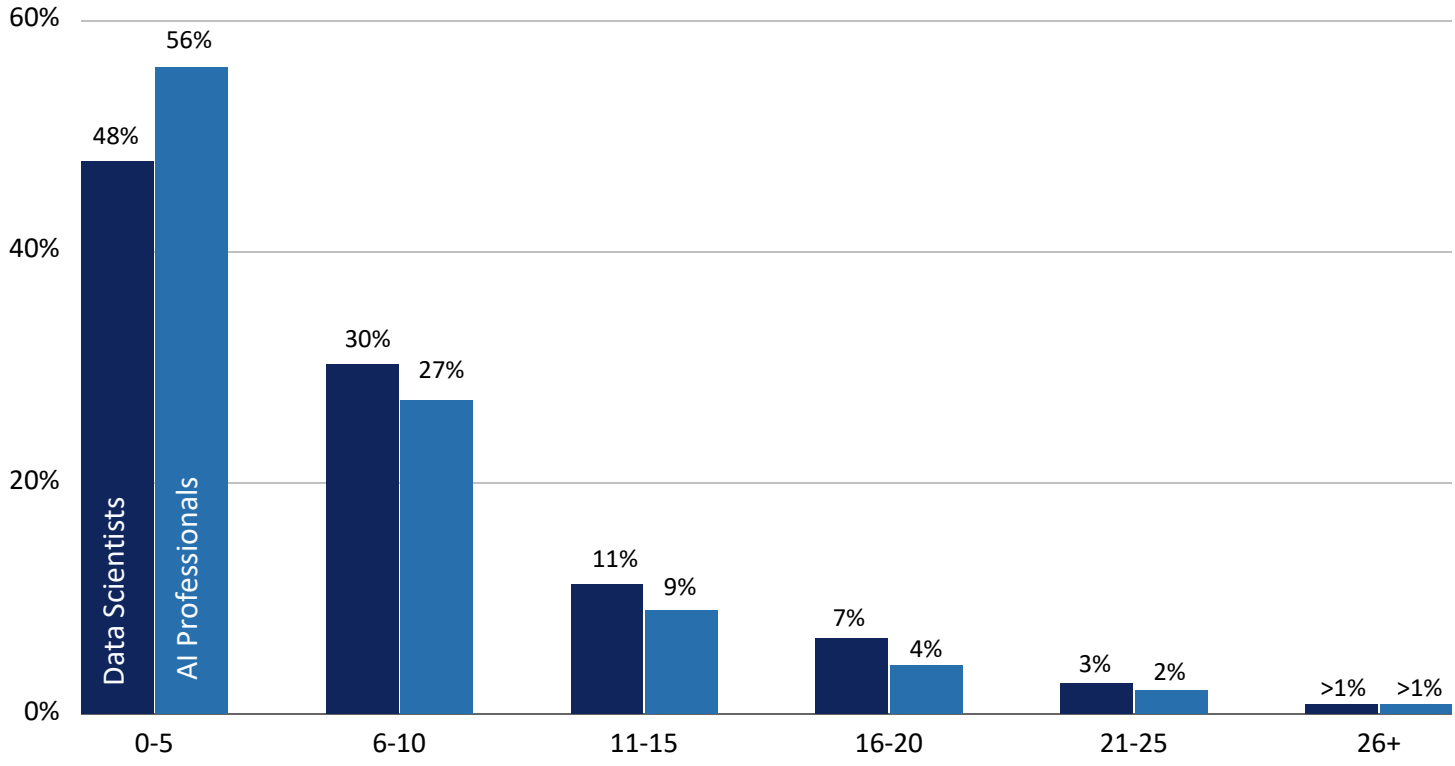



*Base salaries for both males and females in AI are generally comparable across all individual contributor and manager levels.*

*Note - The sample size for women in AI are relatively small at the manager levels and thus, it is difficult to determine if the differences are significant.*

# YEARS OF EXPERIENCE

## Distribution of Data Science and AI Professionals by Years of Experience




### Data Science Professionals

**Median-** **6 years**

**Mean-** **7.4 years**

### AI Professionals

**Median-** **5 years**

**Mean-** **6.5 years**

SECTION 4

# APPENDIX

# Appendix A:
# Report Objective & Design

## The Sample

This sample contains a total number of 1,837 data professionals (1,331 data scientists and 506 AI professionals) of the approximately 100,000 quantitative professionals with whom Burtch Works maintains contact. Burtch Works collected the data for this report during interviews conducted over the months immediately following the period of interviews for the 2022 report, with data collection ending in April 2023. Professionals were included in the sample only if (1) they satisfied Burtch Works' criteria for AI professionals and data scientists, and (2) Burtch Works obtained complete information about that individual's compensation, demographic, and job characteristics.

## How Changes in Compensation Were Measured

While some of the 1,837 professionals in this sample were also in the samples for our previous studies (published annually since 2013), others were not. Therefore, changes in compensation were not measured by differentiating current compensation and compensation reported for the previous report and then taking medians (and other percentiles) of the differences. **Instead, changes were measured by comparing means (and other percentiles) of current compensation to those reported in last year's report.**

## Report Objective

This report is a follow-up to last year's report: The Burtch Works Report: Salaries of Data Scientists and Predictive Analytics Professionals, which was published in May 2022. Its goals are to show (1) current compensation of Analytics Professionals and Data Scientists and how it varies, and (2) how their compensation has changed since last year's report. By continuing to interview large numbers of Analytics Professionals and Data Scientists annually, Burtch Works can show both short-term and long-term trends in the demographic attributes of quantitative professionals and their compensation. Additionally, analyzing AI Professionals (previously referred to as Analytics Professionals) and Data Scientists side-by-side highlights the distinctions between the groups that affect salary.

# Why *The Burtch Works Studies* Are Unique

*The Burtch Works Reports: Salaries of Data Scientists & Artificial Intelligence (AI) Professionals contain highly anticipated salary and demographic data for Data Scientists and other AI Professionals, and are unique because:*

- ***Burtch Works' reports focus solely on Data Scientists and AI Professionals –*** *The report samples include only professionals who are currently Data Scientists or AI professionals, and exclude professions that other salary reports may include, such as business intelligence, information technology, and consumer insights.*

- ***Burtch Works' reports distinguish between Data Scientists and other AI Professionals –*** *The report separates AI Professionals (who typically work with unstructured or streaming data) from other Data Scientists because of their more specialized skillset. By comparing the two groups, the report shows how this distinction affects salary.*

- ***Burtch Works obtains this data by interviewing Data Scientists and AI Professionals –*** *Instead of relying on data provided by human resources departments or from a self-reported online survey, Burtch Works interviews every professional individually. An important advantage of the interview process is that Burtch Works recruiters can obtain information about these quantitative professionals that is not usually provided by human resources departments that may affect their compensation, such as education and residency status. Additionally, because of their nuanced understanding of the profession, recruiters can obtain corrections or clarifications when information provided does not seem credible.*

- ***Burtch Works' salary reports show how compensation varies by job level, region, industry, gender, and education –*** *The sample size is large enough to show compensation data, collected over the past year, at a granular level. Further long-term trends are illuminated with each consecutive report.*

# Identifying Data Scientists & AI Professionals

Data Scientists apply sophisticated quantitative skills to very large sets of data describing transactions, interactions, or other behaviors to discern patterns in those behaviors and to prescribe actions for their firms. What distinguishes them from other quantitative professionals, for instance traditional financial analysts or web analytics professionals, is the volume and type of data with which they work. AI Professionals are analyzed separately in this report because they typically operate on very large sets of unstructured data, requiring additional computer science skills, while traditional/other Data Scientists usually work with more structured (tabular) data. Burtch Works includes the analysis of AI Professional compensation side-by-side with other Data Scientists to highlight the distinction between the two groups.

To identify AI Professionals, Burtch Works uses these criteria:

**1. Educational Background**

Data Scientists typically have a degree – usually an advanced degree (a Master's or PhD) – in a quantitative discipline such as Applied Mathematics, Statistics, Economics, or Operations Research. Some professionals with an MBA are also Data Scientists if their MBA program had a quantitative emphasis.

AI Professionals are even more likely to have an advanced degree, such as a Master's or PhD, than Data Scientists. These degrees are typically in a quantitative discipline, such as Computer Science, Physics, Engineering, Applied Mathematics, Statistics, Economics, or Operations Research.

Note: New educational options include data science degree programs, MOOCs (massive open online courses), and bootcamps which continue to take hold in the quantitative community. Some professionals from related careers or fields of report have successfully pivoted into data science and analytics roles through premier bootcamps and mid-career Master's programs.

**2. Skills**

Data Scientists are proficient users of analytic tools for discerning patterns in data. Also, they can use one or more tools for operating on large data sets (see criterion 3), such as Python, R, and SAS. They may also have some experience with other business and visualization tools.

AI Professionals have expert knowledge of statistical and machine learning methods using tools such as Python and R, with predictive analytics still at the core of the discipline. AI Professionals are usually proficient users of relational databases such as SQL, Big Data infrastructures like Spark and Presto, cloud computing platforms such as AWS, GCP, and Azure. They may also use TensorFlow and deep learning techniques, signal processing, and visualization.

**3. Dataset Size**

Data Scientists: The size of the datasets that data scientists work with are measured in gigabytes or occasionally larger. These datasets are typically structured.

AI Professionals typically work with datasets that are measured in gigabytes or terabytes, usually too large to be housed in local memory, and may work with continuously streaming data. These datasets are typically unstructured.

**4. Job Responsibilities**

Data Scientists have job responsibilities in the following areas:

**Analytical Database Marketing –** Studies existing customers using methods such as customer segmentation, campaign targeting and effectiveness, propensity modeling, and customer lifetime value analysis.

**Credit Risk Analytics –** Measures consumer, enterprise, and market risk levels. Results of analyses might impact the price of product, such as the interest rate for a credit card or its availability, as in the case of a loan.

**Deep Learning –** A type of machine learning that is essentially a neural network with three or more layers, which help to "learn" from large amounts of data, often providing better results that a neural network with just one or two layers.

**Geospatial Analytics –** Analyzes data and makes recommendations around store locations or other physical location decisions.

**People Analytics –** Analyzes personnel-related business problems such as talent retention, attrition, compensation, etc.

**Marketing Science –** Predicts consumer behavior using analytics such as marketing mix modeling. Analysis can use transaction, store, or market-level data.

**Operations Research –** The application of advanced analytical methods for complicated supply chain network design, transportation routing and scheduling, and maximizing revenue based upon a finite capacity, usually in the transportation and hospitality industries.

**Survey Statistics –** Analyzes the results of structured surveys, conducted using a sample of a given population, in order to extrapolate the population's characteristics using descriptive and inferential statistical methodologies.

**AI Professionals specializations may include Natural Language Processing (NLP), Computer Vision (CV), Internet of Things (IoT), Deep Learning, or other areas where unstructured or streaming data is prevalent.**

**Natural Language Processing (NLP) -** giving computers the ability to understand text and spoken words similar to how humans do, through combining rule-based linguistic modeling and machine learning models. Use cases include: spam detection, machine translation, virtual agents and chatbots, social media sentiment analysis, and text summarization.

**Computer Vision (CV) -** A sub-field of AI that enables computers to derive information from images, videos, and other inputs. Use cases include: image classification, object detection, object tracking, and object recognition.

**Internet of Things (IoT) -** An IoT is a system of interrelated sensors, software and processing ability that exchange data over the Internet or other communications network. Applications can be consumer (smart home, elder care), organizational (medical, transportation), industrial (manufacturing, agriculture) or infrastructure (energy and environmental monitoring).

Although they may specialize in a specific area, AI Professionals are typically equipped to work on every stage of the analytics process which includes:

**Analytics –** This involves statistical and machine learning-based modeling in order to understand, describe, or predict patterns in the data.

**Prescribing Actions –** This involves interpreting analytical results through the lens of business priorities and using data-driven insights to inform strategy.

**Programming/Automation –** In many cases, data scientists are also responsible for creating libraries and utilities to operationalize or simplify various stages of this process. Often, they will contribute production-level code for a firm's data products.

Data professionals whose jobs involve data management but stop short of developing models, are classified as Data Engineers and their salaries are described in a separate report.
Their responsibilities could be described as:

**Data Acquisition –** This may involve scraping data, interfacing with APIs, querying relational and non-relational databases, building ETL pipelines, or defining strategy in relation to what data to pursue.

**Data Cleaning/Transformation** – This may involve parsing and aggregating messy, incomplete, and unstructured data sources to produce datasets that can be used in analytics and/or predictive modeling.

Professionals whose jobs are described as business intelligence, marketing research, and information technology are not considered AI Professionals, because they do not work with large datasets. Although AI Professionals are a subset of Data Scientists, they were analyzed separately from the Data Scientist sample because they have atypical computer science skills to manage unstructured data, resulting in slightly higher compensation bands.

# Data Science & AI Professionals Segmentation

To examine how the compensation of Data Scientists and AI Professionals varies, Burtch Works used characteristics of their jobs (level, location of employer, industry) and demographic characteristics (gender, years of experience, residency status) to segment data scientists.

Burtch Works developed the following job categories:

## Individual Contributors

| Level | Responsibility | Typical Years of Experience |
|---|---|---|
| IC-1 | Learning the job, hands-on analytics & modeling | 0-3 years |
| IC-2 | Hands-on, advanced problems, may help train analysts | 4-8 years |
| IC-3 | Analytics SMEs, mentors and trains analysts | 9+ years |

## Managers

| Level | Responsibility | Typical No. of Reports |
|---|---|---|
| MG-1 | Tactical, leads a small team w/in a function, project execution responsibility | 1-3 reports (direct or matrixed) |
| MG-2 | Leads a function, moderately sized team, executes strategy | 4-15 reports (direct or matrixed) |
| MG-3 | Senior/executive management, determine strategy, large team | 15+ reports (direct or matrixed) |

# Appendix B: Glossary of Terms

This section provides definitions of terms used in this report.

**Analytics Professionals**. Artificial Intelligence (AI) Professionals. A specialized predictive analytics professional who has both the programming proficiency required to make enormous sets of unstructured data accessible and also the analytical skills for deriving useful information from those data.

**Base Salary**. An individual's gross annual wages, excluding variable or one-time compensation such as relocation assistance, sign-on bonuses, bonuses, and long-term incentive plan compensation.

**Data Scientist**. Individuals who can apply sophisticated quantitative skills to data describing transactions, interactions, or other behaviors to derive insights and prescribe actions. They are distinguished from the "quants" of the past by the sheer quantity of data on which they operate, an abundance made possible by new opportunities for measuring behaviors and advances in technologies for the storage and retrieval of data.

**F-1/OPT**. A residency status that allows a foreign undergraduate or graduate student who has a non-immigrant F-1 student visa to work in the U.S. without obtaining an H-1B visa. The student is required to have either completed their degree or pursued it for at least nine months.

**Geographic Region**. One of five groups of states that together comprise the entire United States. These five groups of states – Northeast, Southeast, Midwest, Mountain, and West Coast – are shown in Figure 31 on page 52.

**H-1B**. A non-immigrant visa that allows a U.S. firm to temporarily employ a foreign worker in a specialty occupation for a period of three years, which is extendable to six and beyond. If a foreign worker with an H-1B visa quits or loses their job with the sponsoring firm, the worker must either find a new employer to sponsor an H-1B visa, be granted a new non-immigrant status, or leave the United States.

**Individual Contributor**. An employee who does not manage other employees. Individual contributors among the Data Scientists and PAPs in the Burtch Works sample have all been assigned to one of three levels:

Level 1: Responsible for learning the job; hands-on with analytics and modeling; 0-3 years' experience

Level 2: Hands-on with data, working with more advanced problems and models; may help train analysts; 4-8 years of experience

Level 3: Considered an analytics Subject Matter Expert; mentors and trains other analysts; 9+ years' experience

**Industry**. One of eight groups of firms employing most data professionals. These eight industry categories are Academia/Government, Advertising/Marketing Services, Consulting, Financial Services, Healthcare/Pharmaceuticals, Retail & Consumer Packaged Goods (CPG), Technology/Telecom/Gaming, and Other.

**Academia/Government**: Institutions whose purpose is the pursuit of education or academic research such as public universities, private colleges, and for-profit education companies; or organizations that are a part of the governmental system, such as the Department of Defense and national research laboratories

**Advertising/Marketing Services**: An industry consisting of firms that provide services to other firms that include advertising, market research, media planning and buying, and marketing analysis.

**Consulting**: Industry that includes both large corporations and small "boutique" firms that provide professional advice to the managers of other firms.

**Financial Services**: Firms that provide money management, lending, or risk management services, including banks, insurance companies, and credit card organizations.

**Healthcare/Pharmaceuticals**: Firms that provide healthcare services, such as hospitals, and firms that manufacture medicinal drugs.

**Retail & Consumer Packaged Goods (CPG)**: Organizations that purchase goods from a manufacturer to be sold for profit to the end-consumer, and companies whose products are sold quickly and at relatively low cost, including non-durable goods (e.g. groceries, toiletries) and lower quality consumer electronics.

**Technology/Telecom**: Firms that create or distribute technology products or services, such as computer manufacturers and software publishers, and firms that provide telecommunications services.

**Other**: Companies whose industry falls outside of the categories described above, such as airline companies, distribution firms, restaurants, and hospitality.

**Manager**. An employee who manages the work of other employees. Managers among the Data Scientists and AI Professionals in the Burtch Works sample have all been assigned to one of three levels:

**Your source for AI Professional & Data Science opportunities, talent, and industry trends.**

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