



DATA SCIENCE CAREER GUIDE

This guide aims to give you an in-depth analysis of the Data Science career path, the skills required, qualifications, top employable locations and more. Follow the tips to kickstart your career in Data Science.



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What is Data Science?

Data science is the study of data with the goal of gaining essential business insights. It is a multidisciplinary method for analysing massive volumes of data that integrates ideas and techniques from the domains of mathematics, statistics, artificial intelligence, and computer engineering.

Data science professionals can ask and receive answers to questions like what happened, why it occurred, what will happen, and what can be done with the outcomes thanks to this discipline.

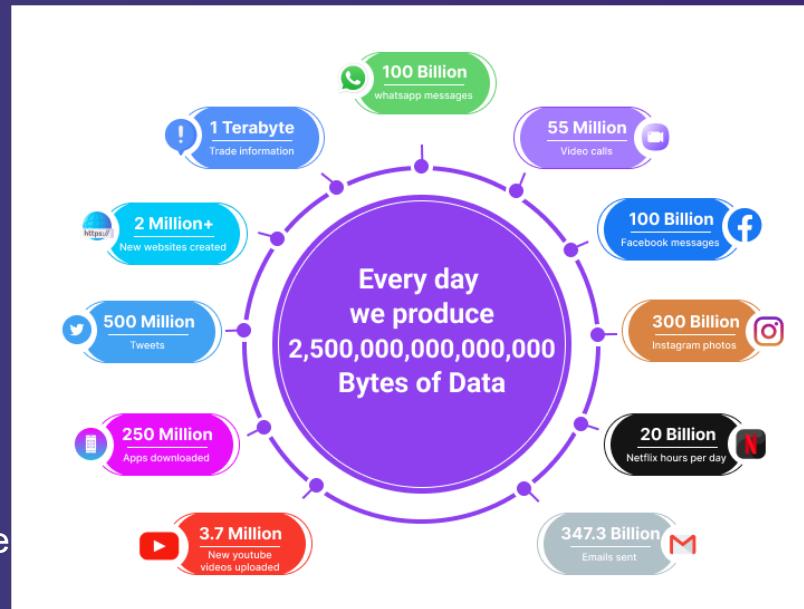
Data science practitioners apply machine learning algorithms to numbers, text, images, video, audio, and more to produce artificial intelligence (AI) systems to perform tasks that ordinarily require human intelligence. In turn, these systems generate insights which researchers or business users can translate into meaningful business value.

The Significance of Data Science

In the current scenario, data is very valuable, which calls for having quality data and understanding how to read it and make data-driven discoveries.

Data science deals with a tremendous quantum of data to discover unseen patterns, derive information, and make business opinions.

Below are some reasons which show the importance of Data Science:



- **Discover Unknown Meaningful Patterns**

Data science allows businesses to find new patterns and relationships. With this we can reveal new insights from it. These insights will allow us to draw meaningful patterns.

- **Develop New Products and Solutions**

These insights about purchase decisions, customer feedback, and business processes drive optimum solutions.

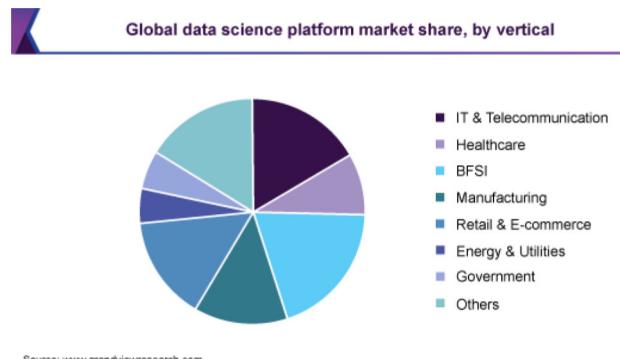
- **Data Science in the IT Industry**

Data Science helps extract meaningful information from large volumes of data. Hence, the stream is gaining lot of popularity in every industry and plays a vital role in the growth of every product.

The Ultimate Guide To Data Science Careers

Industries With The Highest Demand For Data Science Professionals

Some of you may be wondering as to which industry demands the data science professionals more, well the answer is simple – **everywhere**.



Healthcare

- Image Construction
- Genomic Strand Analysis
- Drug Discovery
- Predictive Analysis for Patient Care
- Health monitoring

Big data has become an essential part of modern healthcare, resulting in an increased demand for Data Science professionals. In case you are wondering, Big Data is a vital enabler for discovering modern solutions, providing quality care, and improving the overall efficiency of how most healthcare facilities operate.



Insurance, Finance, and Banking

- Risk Modelling
- Fraud Detection
- Customer Lifetime Value
- Customer Segmentation
- Recommendation Engines, Real time
- Predictive Analytics

The insurance, finance and banking industry has arguably the highest demand. In order to become a data expert in this field, you will need to acquire knowledge about how financial domains work along with information about profitability, portfolio management, risk analysis, and so on. You will require three to four years of experience to become a Data Science professional in the finance sector.



Education

- Alumni Engagement
- Efficient Grading
- Program Customization
- Interaction Assessment
- Plagiarism Spotting

You'd be surprised to learn that Data Science is quite effective for helping students improve their academic skills. In addition, it also helps innovate class curricula, analyze student requirements, and gauge the performance of students and teachers. Several educational institutions utilize Data Science for reducing drop out rates, understanding educational issues, and much more.



Avoiding Power Outage
Productivity Improvement
Avoiding Accidents
Reducing Costs

Utilities and Energy

- Data Science and Big Data's transformative powers are quickly changing utilities and energy industry. Data Analytics has proven to be quite effective for finding unconventional sources of energy, reducing the costs while saving loads of money that would otherwise be spent on needless exploration and drilling. What's more, Data Science also helps avoid power outages, improve productivity, avoid accidents, and much more.



Personalised Marketing
Customer Sentiment Analysis
Real-Time Analytics
Content Distribution
Object Classification
Customer Insights Collection

Communications and Media

- Media giants like Netflix, Amazon Prime, and YouTube were among the first in implementing data science and taking full advantage of it. This helped them offer customers with personalized recommendations, helping them find the content they liked. Now, the communications and media industry became heavily reliant on Data Analytics, resulting in an increased need for skilled Data Scientists in the media and communication playing field. In this industry, Data Science professionals utilize Artificial Intelligence and Machine Learning as strategies to determine a company's entertainment and media initiatives.



Product Assortment
Churn Prediction
Product Management
Predictive Maintenance
Demand Forecasting
Product Affinity Ananlysis

Retail

- Despite the layoffs and closures caused by the global pandemic, the demand for Data Science experts remains high in the retail world.
- Improving relevance and personalization helps the customer centric retail industry comprehend the buyer's patterns and behaviours by utilizing data.



Fault Prediction
Supply Chain Optimization
Price Optimization
Factory Automation
Inventory management

Manufacturing

- Data Science has been quickly becoming crucial for manufacturers in the present day, as it offers loads of benefits. If you aspire to have a lengthy career as a Data Science professional, opting for the manufacturing industry would be a great idea.

Top Companies Hiring Data Science Professionals

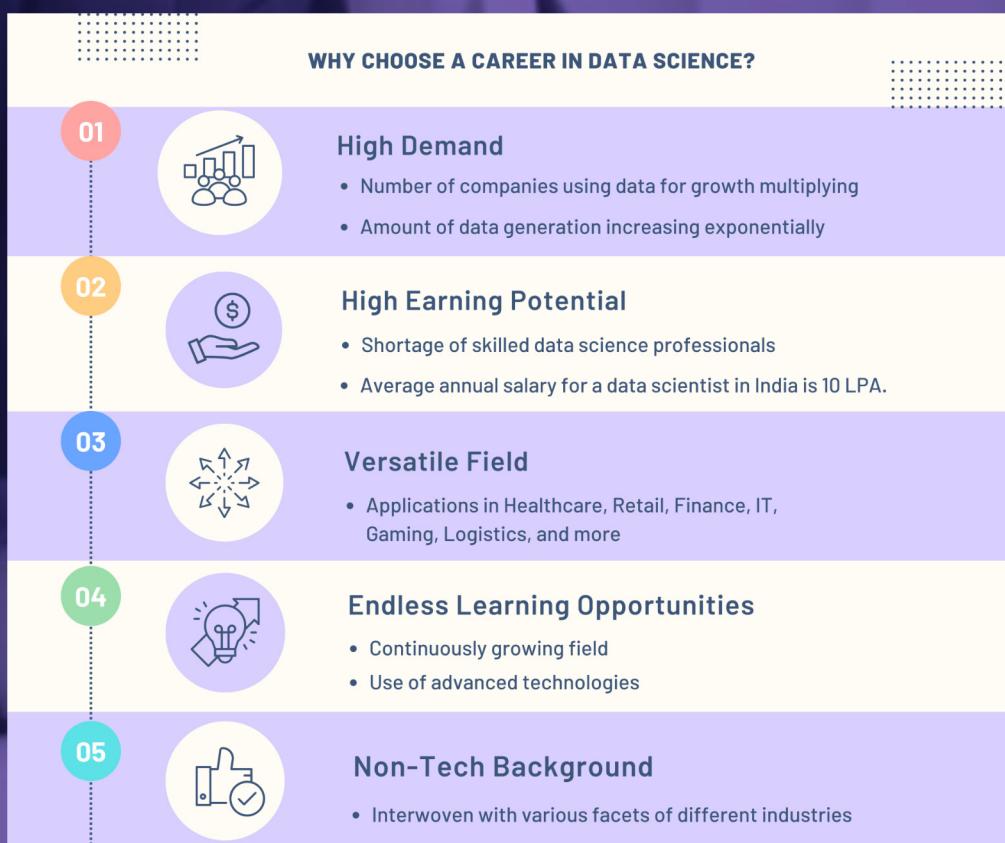


Why Choose A Career in Data Science?

A career in data science is the right choice for several reasons. Firstly, it is a highly lucrative field with a growing demand for professionals.

Data science is being used by organizations across all industries, which means there are many job opportunities available. It is constantly evolving, with new technologies and methodologies emerging all the time.

This means that there is always room for growth and learning in your career



What Are The Different Job Roles And Salaries?

Data Scientist

Average Salary: 10 LPA

Job Requirements: In order to uncover patterns that will be useful to an organization and aid in the direction of strategic business choices, data scientists need to be able to examine huge amounts of complex raw and processed data.

Machine Learning Engineer

Average Salary: 6.9 LPA

Job Requirements: Engineers who specialize in machine learning produce software and build data pipelines. They often require a solid foundation in software engineering, as well as programming and statistical expertise.

They are tasked with creating machine learning systems and performing tests and experiments to evaluate the efficiency and effectiveness of such systems.

Machine Learning Scientist

Average Salary: 15 LPA

Job Requirements: Investigate novel data processing techniques, including supervised, unsupervised, and deep learning methods, for use in adaptive systems.

Researchers in machine learning are frequently referred to as Research Scientists or Research Engineers.

Applications Architect

Average Salary: 26 LPA

Job Requirements: Track the behavior of applications used within a business and how they interact with each other and with users.

Applications architects are focused on designing the architecture of applications as well, including building components like user interface and infrastructure.

Data Architect

Average Salary: 24 LPA

Job Requirements: Ensure data solutions, develop analytics applications for a variety of platforms and are performance-built.

Data architects frequently look for ways to enhance the performance and functionality of already-existing systems in addition to developing new database systems. They also increase access for database administrators and analysts.

Data Engineer

Average Salary: 8.5 LPA

Job Requirements: Apply batch or real-time processing to the collected and saved data.

In order to provide data scientists with access to information, data engineers construct and maintain the data pipelines that form an organization's strong, interconnected data ecosystem.

Business Intelligence (BI) Developer

Average Salary: 16 LPA

Job Requirements: BI developers design and develop strategies to assist business users in quickly finding the information they need to make better business decisions.

Extremely data-savvy, they use BI tools or develop custom BI analytic applications to facilitate the end-users' understanding of their systems.

Statistician

Average Salary: 4 LPA

Job Requirements: Data is gathered, analysed, and interpreted by statisticians in order to find patterns and connections that might guide organisational decision-making.

Moreover, establishing data gathering procedures, disseminating findings to stakeholders, and offering organizational planning advice are frequently included in statisticians' everyday tasks.

Data Analyst

Average Salary: 4.3 LPA

Job Requirements: A data analyst wrangles large data sets that are then transformed and manipulated to form analyses that businesses are looking for. This position often involves watching site statistics and evaluating A/B testing.

By creating reports for organizational leaders that clearly express the trends and insights discovered from their analysis, data analysts help assist in the decision-making process.

Do You Need a Degree to Break into Data Science?

No, you don't need a degree to land a Data Science job.

However, you will need to work hard to gain **knowledge and hands-on experience**. Learning to code, analyze, model, and work with different types of data without any fundamental knowledge can be very difficult, but it isn't impossible.



OdinSchool is a leading provider of industry-aligned Data Science Bootcamp. It will help you learn the statistical skills and foundational coding, setting you up for a successful career in Data Science.

The Future Scope of Data Science

"Data is a precious thing and will last longer than the systems themselves"

- Tim Berners Lee, Inventor of the World Wide Web

Data science penetrates every interaction and transaction in every technology field.

Here are a few factors that point to data science's future, demonstrating compelling reasons why it is crucial to today's business needs and will stay that way in the future too.

- **Handling data**

Businesses and enterprises often collect data for purchases and website interactions. The difficulty of analyzing and classifying the data that is gathered and stored is one that many businesses encounter. In a scenario like this, a data science expert emerges as the savior.

- **Revised data privacy regulations**

As consumers become more aware of data breaches and its negative effects, they are becoming more wary and alert about sharing their data with companies and giving up some of their power. Businesses can no longer afford to treat their data carelessly and irresponsibly. In the near future, some degree of data privacy will be protected, thanks to the GDPR.

- **An astonishing incline in data growth**

Everyday, everyone produces data, both consciously and unconsciously. Over time, our daily interactions with data will only continue to grow. Additionally, the amount of data that already exists in the world will grow at a breakneck pace, so its obvious that the Data experts will be in high demand.

Do you have a passion for Data Science?

If you are very passionate about building a career in Data Science, it is important to familiarize yourself with the different kinds of roles in the domain.

Analytics-Driven Roles

- Data Analyst, Product Analyst, Data Scientist-Analyst, and Product Data Scientist etc.
Significantly influences the businesses by offering suggestions based on data insights.

Job Requirements

- Experience articulating and translating questions and using statistical techniques
- Data-querying skills (SQL and/or Spark, etc.)
- Experience with a scripting language (e.g. Python, R, or Scala)
- Expertise with statistical data analysis, multivariate analysis, AB testing, and sampling methods
- Strong communication and collaboration skills
- Understanding of ML algorithms, including regression, clustering, classification and neural networks (not mandatory)

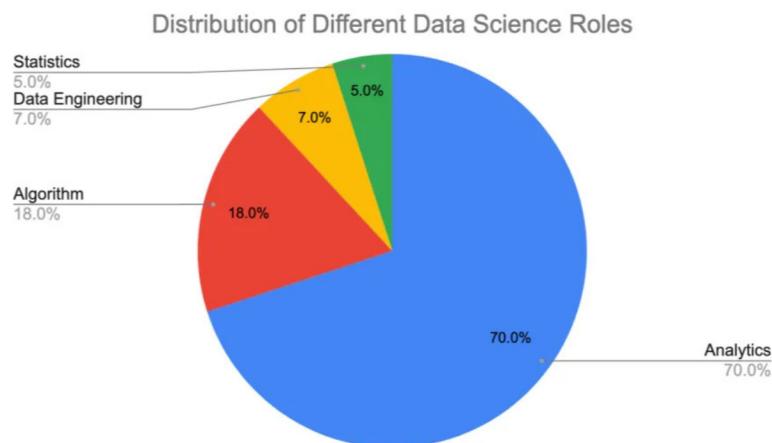
Algorithm-Driven Roles

Data Scientist, ML Engineer, AI Engineer etc.

- Adds value to the organization by designing statistical, machine learning, and optimizing models.

Job Requirements

- Proficiency in programming and scripting languages such as Python, C# or similar
- Strong fundamentals in data structures, problem solving, algorithm design, and complexity analysis
- Familiar with common machine learning, deep learning frameworks like Pytorch/Tensorflow
- Ability to effectively collaborate and ship in a multi-project, fast-paced team environment



Data Engineering-Driven Roles

Data Modelling Engineers, Big-data Engineers, Database Administrator, Data Engineer, Data Architect etc.

- Builds scalable data pipelines to enable data-driven decisions, typically for data-savvy consumers.
- Manage and analyze large volumes of data to support business decisions and drive organizational growth

Job Requirements

- Proficiency in SQL and programming languages such as Python, Java, or Scala
- Experience with data integration, ETL, and data warehousing
- Knowledge of big data technologies such as Hadoop, Spark, and NoSQL databases
- Familiarity with cloud-based data storage and processing platforms such as AWS, Azure, or Google Cloud
- Experience with data visualization and reporting tools such as Tableau, Power BI, or QlikView
- Strong problem-solving and analytical skills
- Excellent communication and collaboration skills, with the ability to work effectively in a team environment
- Relevant certifications such as AWS Certified Big Data - Specialty or Cloudera Certified Data Engineer can also be beneficial in demonstrating knowledge and expertise in the field.

Statistics-Driven Roles

Operations Research Analyst, Quantitative Analyst, Statistician, Data Scientists etc.

- Uses statistical and mathematical methods to analyze data and inform decision-making across a wide range of industries and domains.

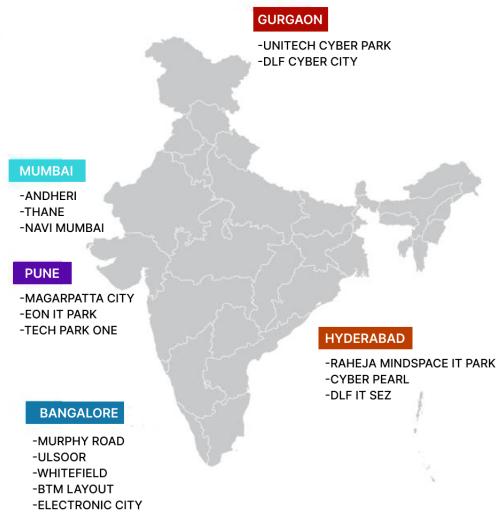
Job Requirements

- Proficiency in statistical software and programming languages.
- Experience in data analysis, including data cleaning, data exploration, and data visualization.
- Experience in machine learning techniques such as classification, clustering, and regression analysis.
- Strong problem-solving skills
- Ability to communicate complex statistical concepts and findings to both technical and non-technical stakeholders.

Leading Employable Locations for Data Science

The future of work for data science professionals is promising. Numerous significant businesses in India use data science and are always looking for skilled experts and professionals in this field.

TOP PLACES FOR DATA SCIENCE JOBS



Hyderabad

The City of Pearls has developed into another booming Technology hub in the south as a result of Amazon creating its largest campus in the world there. There is space for growth in Hyderabad for data science employment. Moreover, startups are beginning to succeed in this domain.

Some of the companies hiring for data science in Hyderabad include – Kanerika Inc., Vitwit, TCS, and Wipro. In Hyderabad, a Data Scientist's yearly compensation is predicted to be INR 1,226,336, with an average pay of INR 1,022,150.

Bangalore

Data science is benefitting greatly from India's IT hub. A data scientist was also among the first to be employed in this city. In order to expand their business, startups first need a lot of data and information. Opportunities in data analytics have greatly risen as a result of the expanding start-up culture.

Top companies hiring data scientists in Bangalore are Amazon, Accenture, EY, IBM, Capgemini and more. In Bangalore, a data scientist makes an average salary of INR 1,013,493

Pune

Pune has traditionally been India's top location for the IT industry because of its excellent educational system and rich cultural legacy. Several start-ups with bright futures in software development and big data research are based in Pune. For professionals, Pune is a thriving city with lots of opportunities for research and innovation.

Some of the companies hiring for data science in Pune includes – Accenture, Zensar technologies, Innoplexus, Infosys, and more. In Pune, a data scientist makes an average salary of INR 809,220.

Gurgaon

OYO and Urban Company are two well-known startups having Gurgaon as their corporate home. Even in this city, especially at start-up companies, data experts can advance their careers. Gurgaon is renowned for its vast metro system, variety of street food alternatives, and convenient way of life.

Some of the companies hiring for data science in Gurgaon include – Amazon, Larsen & Toubro Infotech Limited, PayU, and more. In Gurgaon, a data scientist makes an average salary of INR 1,026,972.

Mumbai

While the city's share of jobs in the analytics business has increased in recent years, Mumbai has emerged as the location with the highest data science salaries. There are now more opportunities in data science thanks to the establishment of start-ups in this area during the past several years.

Companies like Moringstar, Cognizant Technology Solutions, Capgemini, Deloitte, and others are looking for data science positions in Mumbai. An average data scientist in Mumbai is paid INR 854,158.

A horizontal row of ten white plastic letter blocks. Each block has a black capital letter on it, spelling out the word "DATA SCIENCE". The blocks are arranged in a slightly staggered pattern, with some letters offset to the left and right.

D A T A S C I E N C E

Fundamental Technical Skills Required to Enter the Data Science World

Programming

Learning a computer language should be the first and most important step towards data science.

Action

Start with learning Python as it is a very simple, versatile language with pre-existing strong libraries.

Database Knowledge

Most of the data across the globe is present in various databases

Action

Gain knowledge about databases like Cassandra, MySQL, and Oracle could prove to be crucial for the aspiring Data Science professionals.

Acquaintance With EDA(Exploratory Data Analysis)

EDA includes analyzing various data, variables, various data patterns, trends and extracting useful insights from them with help of various graphical methods

Action

Learn EDA. Best way is to join a course

Data Visualization

Many companies produce data in mass amounts, and in most cases, they need someone to translate and visualize it into an easy to comprehend format.

Action

Get a thorough understanding of several data visualization tools like Qlikview and Tableau

Big Data

Big Data Analysis is a renowned technique for gaining actionable insights through hidden patterns, market trends, and studying various correlations.

Action

Learn Spark and Hadoop as they are critical big data analytic frameworks that will help you run several Data Science algorithms in a much shorter period.

Machine Learning

Machine Learning is a critical part of any organization that handles loads of data every day.

Action

While not every company requires you to have machine learning expertise, having some know-how about unsupervised learning, reinforcement learning and neural networks will be highly beneficial.

Deep Learning

Deep Learning is a part of Machine Learning possessing expertise in different techniques like deep belief network, artificial neural network, and Tensor flow could help you simplify complex tasks.

Action

Join a Data Science course to learn particular deep learning techniques and enhance your skills with videos and tutorials from industry-recognized experts.

Fundamental Non- Technical Skills Required to Enter the Data Science World

Teamwork

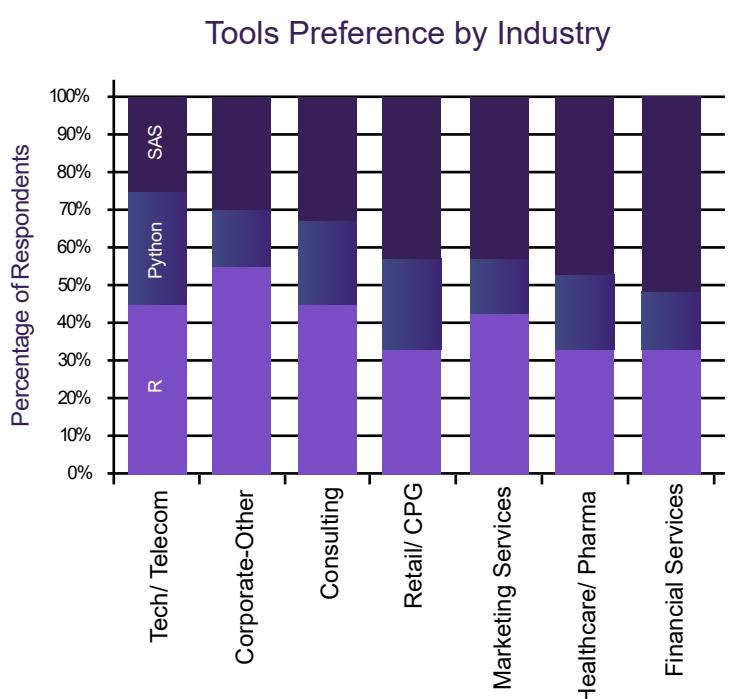
Data science projects often involve a team of individuals with different skills, such as statisticians, computer scientists, domain experts, and data engineers. They work together to collect, clean, and analyze data, and to develop and implement models and solutions.

Communication skills

One does not have to be but comfortable communicating freely as it allows us to express our technical ideas, concepts to various non-technical staff/ authorities of the firm.

Business Acumen

Understanding about the industry we are working in is very important for various analyses and effective solutions for the problems in those industries.



FAQs

1. Does Data Science require coding?

Yes, data science needs coding because it uses languages like Python and R to create machine-learning models and deal with large datasets. But, there are roles that require very minimal coding.

2. Can a person with a non-IT educational background learn coding and pursue data science as a career?

Yes. A person with a non-IT educational background can learn coding and pursue data science as a career. Learning process can get easier if the person can follow a industry-vetted curriculum and practice real-life usecases.

3. Which programming language should I learn first to become a Data Science professional?

This depends on the work requirements. Typically, Python is learnt first due to its ease of use and extensive library support.

4. What skills are essential for a career in data science?

Data science requires a combination of programming (Python/R), statistics, machine learning, data visualization, and domain knowledge. Soft skills like problem-solving and communication are also crucial.

5. Can I become a Data Science professional without a degree?

Yes, becoming a data scientist does not always necessitate a degree. However, certifications in data science can add credibility to your profile which will showcase your skills.

6. How important is domain knowledge in data science?

Domain knowledge, or understanding the specific industry you're working in, is crucial for interpreting data accurately and generating meaningful insights. A data scientist with strong domain knowledge can provide more context and actionable recommendations.

7. What are the career challenges in Data Science?

Data scientists often encounter challenges related to messy or incomplete data, bias in algorithms, ethical concerns, and communicating technical insights to non-technical stakeholders. Staying updated with rapidly evolving technologies is also a challenge.

FAQs

8. What is the earning potential in data science?

Data science is known for its competitive salaries. Earnings can vary based on factors like experience, location, industry, and company size. Generally, entry-level data scientists can expect 10 LPA that grows significantly with experience.

9. How do I showcase my skills to potential employers?

Create a strong online presence through platforms like LinkedIn and GitHub, where you can share your projects, code, and insights. Building a portfolio of data science projects and participating in hackathons or competitions can also help demonstrate your skills.

10. How do I start a career in data science without prior experience?

Begin your learning journey by learning the basics of programming and statistics. Online courses like OdinSchool's Data Science Bootcamp offer a comprehensive data science industry-vetted curriculum. Additionally, creating personal projects, contributing to open-source projects, and participating in online communities can also help you gain practical experience.

11. I have a 5-6 year career gap. Can I pursue a career in data science?

Of course, you can! There are professionals out there who made it big after very long career gaps.



Do You Want to Build Your Career in Data Science?

Join  OdinSchool's
Data Science Bootcamp and kickstart your career on a grand scale.

Duration : 6 Months

Outcome : A Data Science Job

We partner with 500+ companies that hire from us!



JPMORGAN
CHASE & CO.



Contact Us

Address:

OdinSchool
GreyCampus Edutech Private Limited,
Second Floor, Block 1, My Home Hub,
HITEC City, Madhapur,
Hyderabad - 500081

Website

www.odinschool.com

Email

hello@odinschool.com

Phone

IND +91 892 908 3443



OdinSchool