

# Step-by-step Guide to Become a Data Scientist in Retail Industry

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## Introduction

Data analysts with the technological know-how to tackle challenging problems are data scientists. They collect, analyze, interpret data, and handle statistics, mathematics, and computer science. They are accountable for providing insights that go beyond statistical analyses. A data scientist's function is highly transferable, and data scientist employment is available in private and public sectors, like consulting, finance, manufacturing, pharmaceuticals, government, and education.

The data science platform market is predicted to develop at a **CAGR of 27.7%**. The rising interest in big data and the adoption of cloud-based solutions are the factors driving the expansion of this market.

The use of data science in retail is rising, with tech giants like Amazon and Netflix already reaping all the benefits. These businesses personalize their marketing strategies and employ advanced analytics in their systems. This results in a better client experience and higher earnings.

But first, let us understand what the retail industry is.

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## Introduction to the Retail Industry

The retail industry includes businesses offering goods and services to customers. Globally, there are several retail sales and shop categories, including grocery, convenience, discounts, independents, department stores, DIY, and electrical. The retail industry grows steadily year after year and employs many people worldwide, particularly with the growing popularity of online retail.

The competitive nature of this fast-paced industry has been evident in recent years. Retail stores have been forced to reexamine their long-standing processes and techniques that have shaped the sector for years in preparation for the coming years. These global shifts in supply chain management for many well-known businesses only serve to demonstrate how crucial retail sales are to the economy.

## Importance of Data Science in the Retail Industry

Data processing and analysis are becoming increasingly valuable, and this is where a data scientist emerges into the spotlight. Executives have heard that data science is a hot business and that data scientists are modern-day superheroes, but many are still unsure of the value a data scientist can bring to a company. Let's look at the advantages of data science.



Source: Analytics Vidhya

- Providing management and officials with the tools they need to make better decisions.
- Directing actions based on trends that help in defining goals.
- Challenging the team to embrace best practices and focus on issues that matter.
- Recognizing opportunities.
- Making decisions based on verifiable, data-driven evidence.
- Putting these decisions to the test.
- Target audience identification and refinement.
- Hiring the best people for the organization.

## What Role Does Data Science Play in Retail Industry?

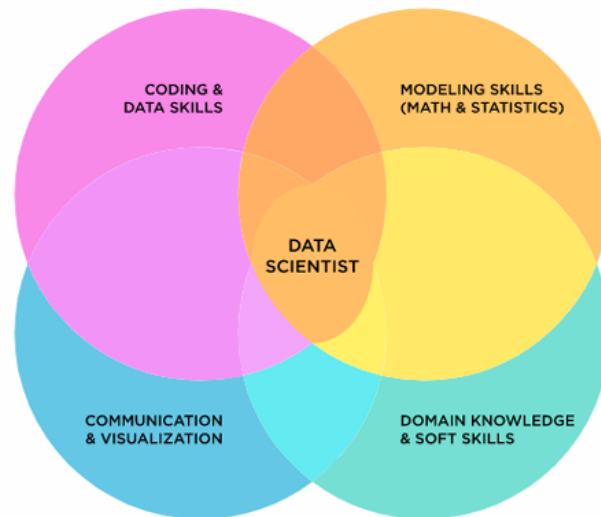
An analytical mentality and the necessary technical skills will allow you to experiment with data and derive insights that can be used to optimize company processes.

- Create product insights utilizing complex analytics and machine learning methods.
- Write, validate, and maintain code to support research and data analysis using Hive, Python, and SQL.
- Diagnose problems and areas for improvement in data preparation QC, efficiency, and accuracy.
- Create and communicate powerful insights by combining numerous data sources and modeling.
- Deal with massive datasets at the responder, log file, or transactional levels.

Of course, not all of these tasks are required for every role, but we chose the ones that are most likely to be encountered in any data scientist job in the retail industry.

## Skills Required to Become a Data Scientist in the Retail Industry

Most firms have understood the value of data-driven decision-making. Before we go any further, here are the in-demand and fundamental Data Science skills that will get you hired:



Source: Tibco

1. Specialization in Statistics
2. [Data Extraction, Transformation, and Loading](#)
3. At least one programming language: [R or Python](#)
4. [Machine Learning Algorithms](#)
5. Data Wrangling and Data Exploration
6. [Data Visualization](#)
7. Big Data Processing Frameworks
8. Advanced Machine Learning (Deep Learning)

## 5 Steps to Become a Data Scientist in the Retail Industry

Data science is the study of obtaining knowledge from the collected data. Professionals that can turn data analysis into a competitive advantage for their organizations are in-demand. As a data scientist, you will develop data-driven business solutions and analytics. The following is the step-by-step guide to become a data scientist. You can also check the process of becoming a data scientist from scratch [here](#)!

### Step 1: Understanding the Business Problem

A good business acumen is required to understand the company's situation. As a data scientist in retail, you will use your analytical talents to assist in problem-solving. You'll frequently use big data to uncover hidden trends and patterns and drive corporate success.

### Step 2: Data Collection and Understanding

Once you've identified your business problem, you may begin gathering relevant data to tackle it using data science. Once you've gathered the necessary information, you can do data mining and exploration to identify the features of interest. You must comprehend the relationships that the qualities have with one another. Statistics knowledge is essential at this stage.

### Step 3: Data Modeling

After gathering the data, you may begin developing a predictive model.

In this case, understanding algorithms and the mathematics underlying them is essential. When it comes to developing models, programming abilities come in handy.

#### Step 4: Model Evaluation and Deployment

Once the model has been created, it must be evaluated and validated. Understanding post-modeling is vital in this situation. If everything is deemed satisfactory, the model will be implemented.

#### Step 5: Iteration

Once you have the data, you will need to use your reporting and narrative skills to describe what happened and the role your model played.

## Top Applications of Data Science in Retail

The retail industry is rapidly expanding. Retailers can use data analysis to develop a unique psychological image of a shopper to pinpoint that person's pain points. As a result, store practices frequently influence consumers.

We'll look at how creative Data Science applications in retail are transforming the sector.

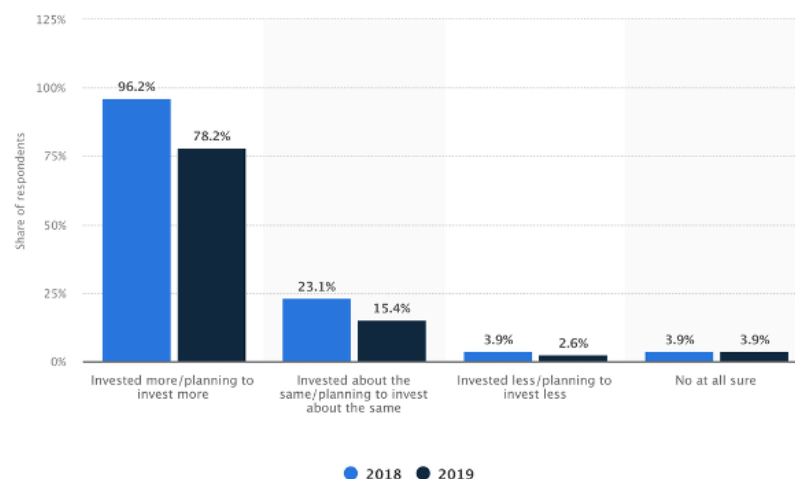
### Price Optimization

When making a final selection, 70% of customers say the price is significant. Data analysis tools enable us to get closer to tackling this challenge than ever before.

A significant advantage brought about by optimization methods is the ability to identify a pricing point acceptable to both the consumer and the shop. The process of selecting prices depends not only on the costs of producing an item but also on a typical client's purchasing power and the bargains that competing firms offer. The data analysis technologies at our disposal bring a new level of sophistication to the solution to this challenge.

### Personalized Marketing

Retailers may benefit from implementing a marketing strategy because it is the most effective way of attracting customers. In terms of how it operates, it collects data on consumers' financial transactions. This approach can potentially predict future decisions and preferences on a large scale. Insider information about consumer preferences and product previews is more useful in marketing settings. For instance, Himalaya pioneered personalized solutions for clients as a marketing tactic to appeal to its target market.



Source: Statista

## Fraud Detection

Financial losses caused by fraud are a global problem. Customers and businesses are both affected by credit risks, money losses, and delivery fraud. This is where Data Science can help the retail industry. Data Science is used to gather and analyze information about customers and retailers. Following that, numerous data visualization methods are used to derive the underlying patterns and trends in the dataset. It also searches the data for unusual acts or practices. The payment gateway will flag the transaction as suspicious if the cardholder is not prompted for an OTP or PIN before the funds are taken.



Source: Unsplash

## Adoption of Augmented Reality

Since the 2020 epidemic forced models and photographers to work from home, Asos has increased its use of “See My Fit,” an augmented reality technology that allows garments to be “digitally fitted” onto models. With augmented reality and artificial intelligence, customers may acquire a sense of a product in real-time. In short, augmented reality has become a must-have tool for merchants. For example, Ikea’s in-house design studio, Space10, upgraded Ikea’s augmented reality product to make it more practical and interesting for users.



Source: Stambol

## Inventory Management

Retailers try to predict how much of a particular item or service customers will want to buy during a given time period and then stock up accordingly. Patterns, correlations, and supply chain links are discovered

using sophisticated machine learning algorithms and data analytics tools. An algorithm constantly improving and changing its parameters and values defines the optimum stock and inventory strategies. High demand patterns are discovered, and future sales trends are planned, all while supply chain management and inventories are optimized through the use of incoming data by analysts.



Source: techvidvan

## Sentiment Analysis

[Sentiment analysis](#) helps collect customers' subjective data to create a holistic image of them. The advent of data science in the retail sector has facilitated the collection and evaluation of consumer feedback. Data Scientists can assess the public's perception of a brand using information gathered through surveys, social media, and other digital channels. Social networking platform information is readily available. As a result, analytics on social media sites are significantly less difficult to set up.



Source: mastersindatascience.org

## Customer Lifetime Value Prediction

In the retail business, "customer lifetime value," or CLV, refers to the total value of a customer's contribution to a company's bottom line during their relationship with that company. The statistical approach is helpful in assessing the client's purchasing pattern up to the point at which the client stops making purchases. Data science and machine learning ensure that the retailer understands its customers, enabling service enhancements and priority setting.

## Intelligent Cross-Selling and Upselling



To enhance revenues, every store employs cross-selling and upselling. Cross-selling is the practice of selling related things to existing customers. Upselling, on the other hand, is the technique of presenting a more expensive but superior product to a customer. Profits in retail can be increased with Data Science without using [A/B testing](#). We can boost our profits by using data science to target specific groups of clients with customer-targeted marketing.

## Behavior Analytics

Client insights assist businesses in increasing conversion rates, tailoring marketing efforts to the individual consumer, increasing sales and retention, and lowering the cost of customer acquisition. Data Scientists will be able to collect and analyze data via various channels, including smartphones, social media, physical storefronts, and e-commerce platforms. Furthermore, the data assists firms in identifying their most important clients, learning what inspires them to purchase a particular product, and so on. This helps businesses attract new clients while keeping existing ones.

## Market Basket Analysis

This method of analyzing customer data has long been employed in the retail industry and is currently one of the most widely used Data Science methods. For years, traders have relied on it to boost their profits. Market basket research is only as useful as a company's client information. Data science tools can help predict what customers will buy. Keeping track of customer information and preferences allows shops to charge acceptable pricing. It also aids in providing relevant adverts to the right people.

## How Much Can You Make as a Data Scientist in Retail?

There are certain factors that influence the income of a data scientist. Of course, your experience in the field is the most important one. However, factors such as talents, job duties, the organization you work for, and your location all impact a data scientist's income.

Experience	Average Salary
Less than 1 Year	5-7 LPA
Between 1-4 Years	8-12 LPA
Between 5-9 Years	12-15 LPA
Between 10-19 Years	15-25 LPA
Decades of Experience (Management Level)	25 LPA- 1 Cr PA

Content Source: [Knowledgehut](#)

A data science career in data is exciting to young IT workers due to the strong correlation between years of work experience and higher-paying salaries. In this part, we'll look at how data scientist salaries improve with experience. According to Glassdoor, the average salary in the data field may look like this in the future:

- Aspiring data scientists who are recent graduates with a bachelor's degree in India can expect to earn 511,468 rupees per year as an entry-level data scientists.

- A data scientist in their early career with 1-4 years of experience makes Rs.773,442 per year on average.
- Employees with 5 to 9 years of experience and a master's degree can expect a salary of INR 12 to 14 lakhs per year. According to payscale, the average mid-level data scientist's salary is Rs1,367,306 per year.
- A highly skilled professional with decades of experience, advanced degree, and technical skills or who has held executive positions might expect to earn anything from INR 24 lakhs and a healthy crore per year!

## Courses to Take up to Boost your Data Scientist Skills in Retail

A data scientist is a professional who is well-versed in mathematics, statistics, optimization methodologies, and computer languages. He/she has hands-on experience with real-world data analysis and predictive modeling.

We have identified the top data science course along with certifications that are both appealing and offer a dynamic and easy-to-learn course structure that data scientists need. These courses will teach you data science in a short period of time.

1. [Data Science Immersive Bootcamp](#)
2. [A comprehensive Learning Path to Become a Data Scientist](#)
3. [Top Data Science Projects for Data Analysts and Scientists.](#)
4. [Linear Programming for Data Science Professionals](#)
5. [A Comprehensive Learning Path to Become a Data Engineer](#)

Here are some of the courses offered by Analytics Vidhya. To land your dream job, you can learn the fundamentals and advanced data science skills. If you wish to learn more about courses like Microsoft excel, python, sql, etc., you can refer to our [certified courses](#) here and find the best match for your skills and boost your career path.

## Where can you Find Data Scientist Jobs?

Getting a career in data science is difficult. Every day, hundreds of jobs are posted on sites like Indeed, LinkedIn, and Monster, causing many people to give up on their job hunt before they even begin. Furthermore, the "big boards" make it difficult to find new job postings that haven't already been repeated. And the endless variety of job titles presents its own confusion around relevance, e.g., is a job actually in data science?

If you want to stop wasting your time, there is a better choice:

Begin your search on a data science job board.

These are the top 13 job boards for data scientists, data engineers, and AI and machine learning specialists.

1. [Analytics Vidhya](#)
2. DataJobs.com
3. Blind
4. Untapped.io
5. Analytics Jobs



6. AI-Jobs.net
7. Y Combinator
8. R-users
9. DataScientistJobs
10. AngelList Talent
11. Upwork
12. Starbridge Partners
13. Underdog

## Conclusion

Every year, retail data's number, diversity, and usefulness increase dramatically. Retailers are turning insights into profitable margins by building data-driven initiatives. The data science applications in retail allow merchants to enter the market, improve the customer experience, and boost sales and thus money. Moreover, as technology advances, data science will have much more to offer in retail.

Data scientists aspire to apply their skill sets in a variety of fields. However, choosing an industry-specific data scientist role can help a person stand out amongst the crowd due to the niche-specific knowledge and relevant industry experience. If you choose an industry-specific career as a data scientist, you will have a very good probability of landing interviews because you have the exact experience they are seeking for.

That's all you need to know to find the ideal data scientist job in retail for you! If you want to read more such content, tell us in the comments below!

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