

Career In Data Science: The Prospects

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- BY DR. SETHURAMAN JANARDHANAN

We are passing through interesting times since Big data has become an indispensable part of business, thanks to the revolution of ubiquitous computing devices and new age disruptive technologies. The exponential rise of data presents a huge opportunity for businesses to derive actionable business intelligence. However, the challenge lies in the collection, segregation, analysis, and derivation of actionable business intelligence and insights from the deluge of structured and unstructured data. Here comes the relevance of professionals bearing a strong technical background and having formidable skills in computer programming, maths and statistics, who can work on large chunks of data, clean, organize and derive meaningful insights and implement them in business. Organizations are realizing the significance of this data gold mine in business, and are witnessing huge demands for data science professionals. It is little wonder that data science has been heralded as one of the hottest fields in the 21st century by the Harvard Business Review.

A research by McKinsey has reported, "By 2018, the United States will experience a shortage of 190,000 skilled data scientists, and 1.5 million managers and analysts capable of reaping actionable insights from the



big data deluge". From the Indian context also, we can see great excitement about big data and data science within organizations. Indian companies have started hunting for competent data science professionals who can add value to their business. However, there is a presently a huge demand- supply mismatch in the field of Big data and data science. As every business function and industry identifies the relevance of big data analytics and wants to stay ahead of the competition, the demand for data science professionals will be on the rise.

Data Scientists as value adders

Data scientists solve some of the hardest problems that businesses might face and they are relevant to almost all the realms of business. The below mentioned pointers indicate as to how data scientists can add value in various Industry domains.

Marketing - In the business of marketing, data scientists can leverage huge volumes of data to optimize their marketing spends and improve their ROI on their campaigns, thereby improving response rate of the campaign.

Banking- In the arena of banking, a data analyst deployed in risk function can leverage big data in identifying fraudulent activities and take insightful steps to cover the risks in a comprehensive manner.

Retail- Digital and ecommerce operations are the frontiers in applying big data analytics for business optimization. A data scientist can play a major role in this field towards the analysis of consumer data collected through various means, and can thus identify the customer behaviour. Basis the analysis, retailers can provide targeted personalized recommendations to aid in footfall enhancement, and thus render increased sales conversion.

Manufacturing- Data science plays a major role in the manufacturing industry as well. By leveraging their skills, data scientists can forecast the product demands and optimize the inventory supply chains of the business.

Data Science Career Prospects and Skills

While programming skills and statistical expertise are considered to form the foundation of any data scientist, strong business acumen aids them to navigate their career on the right track. However, with data science gaining maturity, and the change in the business requirements surrounding Big Data, the expectations regarding the skills and the capabilities of a data scientist are also evolving. With machine learning, deep learning, advanced analytics and cognitive computing gaining greater relevance, the requirement has shifted from the traditional business data scientists to advanced machine data scientists.

A business data scientist understands the business and builds the data model based on the data made available from disparate sources through suitable tools or frameworks. They discover hidden insights to address a business problem or can provide a competitive edge. These insights will be provided as recommendations for the business. However, in the case of machine data scientists, apart from figuring out the hidden insights, the implementation of these insights into the system also come up as their responsibility.

Previously business administration or statistical and mathematical skills were largely suited for a data science professional. However, desirable skills for machine data scientists are a combination of in-depth programming skills, deep analytical skills, machine learning techniques and statistical skills along with strong business acumen. Analytical problem solving, intellectual curiosity, industry knowledge, critical thinking, effective communication and certifications in Data Science and Analytics will be added advantages.

SAS and SPSS are the major technologies that professionals in business data science must be aware of. Java, Python, Scala are the most common programming languages used in Big Data applications. For a machine data scientist, the required skills include knowledge in programming languages, Hadoop, Hive, Spark for building custom models and algorithms. Further, a data science professional should be familiar with SQL knowledge, as majority of the enterprise data is stored in data warehouses

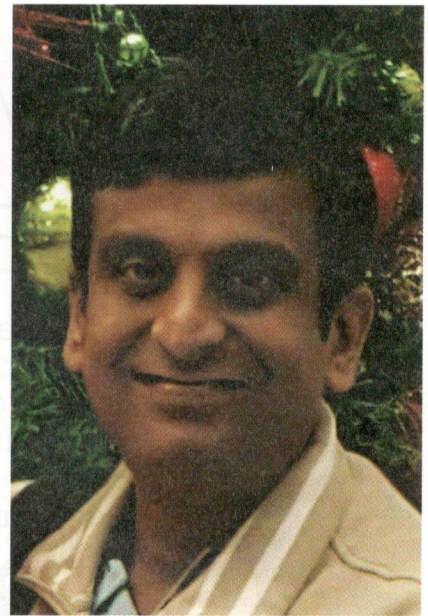
Suggestions for aspiring data science professionals

- Learn one programming language in depth
- Develop your SQL skills and data preparation skills
- Hone your statistical modelling and, algorithmic skill sets
- Be at par with the tools and technologies to implement it

It is equally important for the data science professionals to focus on the business outcome on their mind while going through major responsibilities of their job including Data Preparation, Statistical modelling and Algorithm development, Insight generation and the Deployment of insights in business.

Future Prospects of Data Science

With data science as the key enablers for business growth and success, CXOs in every company irrespective of the size demand to have sufficient amount of data science professionals. Future CXOs would have data science as a key requirement in the next ten years to understand high-level patterns and trends. In line with the strength of the Indian economy as well as the



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availability of a huge talent pool, India can hold a key position in nurturing data science professionals in the coming days. However, more thoughtful steps and timely action plans from the organizational side as well as from the side of Indian Universities are the need of the hour.

The opportunities are unlimited and data science will become one of the most sought after and highest paid professions in the next five years. Every industry and function will have data science embedded in their operations. To conclude, the Burtch Works Study titled 'Salaries of Data Scientists April 2016' reports "The median base salaries of data scientists increase with job level for both individual contributors and managers. Level 1 individual contributor earns a base salary which is 1.5 to 2 times more than other IT professionals. For managers, those salary levels can go up to 3 times compared to IT managers."

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