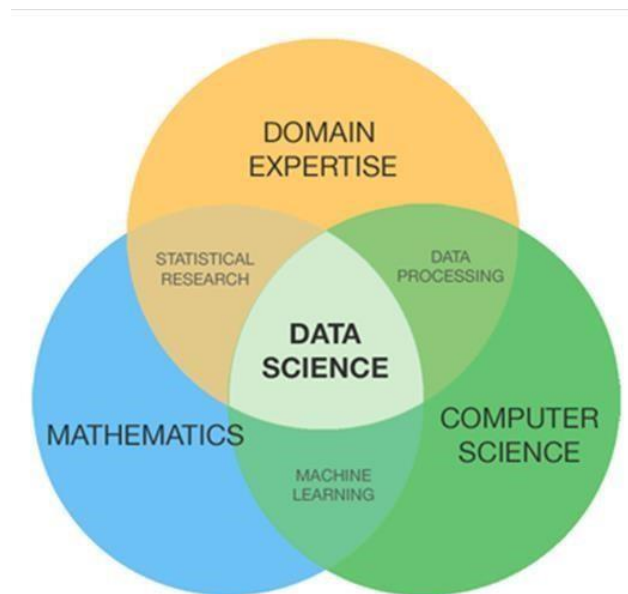




## Undergraduate Program in Data Science - Course Introduction, Scope and Career Opportunities

**Evolution of Data Science:** Data Science is an interdisciplinary course with major focus areas viz. Mathematics, Computer Science and Domain Expertise. By virtue of Information and communication tools (ICT), extensive usage of smart phones and social media applications, incredible amounts of data is generated every minute. The extremely voluminous and heterogeneous data which is generated at a rapid pace is referred as Big Data. Big Data is processed to gain deep insights of the data and provide value added services to the users with improved and efficient business decisions. Applications of Big Data processing include health care, banking, insurance, automobile, aviation, ecommerce, social media, retail and supply chain etc. **The vast number of applications of Big Data Processing and its ever increasing scope has led to evolution of a new branch of engineering called Data Science.**





# SPHOORTHY ENGINEERING COLLEGE

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## Figure 1: Data Science Landscape

### **Prerequisites to take up Data Science course:**

- Intermediate student with good knowledge in Mathematics (especially probability and statistics) and inclination towards programming.

### **Career Opportunities in Data Science:**

1. Data Analyst : A typical statistical analyst with good mathematics background and expertise in any one analytical and visualization tools like R , Tableau, QlikView etc.
2. Data Engineer: The one who knows, how to extract data from various sources, refine it and able to process large scale data using distributed processing tools like Apache Hadoop, Apache Spark etc.
3. Data Scientist: A person who does designs end to end business solutions in the big data landscape. A data scientist is more a business analyst with expertise in the both data analysis and data engineering.

### **Infra Structure requirements to offer Data Science UG Program:**

1. Computer Labs with at least 16 GB RAM and modern processors.
2. One Server machine to setup Distributed Processing Platform.

### **Human Resource requirements to offer Data Science UG Program:**



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1. To process data, one should know data extraction, preprocessing, transformation, loading and processing of data which require strong knowledge and skill set in computer architectures, computing techniques, data bases, principles of computer networks, principles of software engineering and programming. Hence Data Science is an inherent segment of Computer Science and Engineering program and faculty from Computer Science and Engineering program will be the key contributors.
2. One of the important component of Data Science is Statistical analysis and Mathematics Department will significantly contribute to the same. Hence Data Science program needs a proper proportion of both departments mentioned above.

## **Why to Choose Data Science Program at Sphoorthy Engineering College**

1. Faculty competency is the key to quality education. In this regard, Sphoorthy Engineering College is a one stop solution for all Data Science aspirants because of its faculty strength. Our Faculty have certified skill set in Data Science tools with rich experience, expertise and equally supported by vast experience of mathematics department.
2. Our faculty have served as resource personnel, trainers and advisors for various other colleges in Data Science tools and also supported in the establishment of Cluster Computing facility for Big Data Processing.
3. Laboratory infrastructure is in place, with capability of executing any Data processing tool.



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4. Continuous support of the management in skill development of the faculty on latest advancements in technology, infrastructure procurement and performance based incentives for faculty.
5. Our College has very strong industry and societal connect which can help students in taking up real time and community service projects which will facilitate in experiential learning and quality project work.
6. Our training department is competent enough to offer training on cutting edge technologies and ensure the student's learning is in line with the industry needs.
7. Our placements team is capable of reaching out to industry leading to domain specific placement opportunities for the students.
8. Our faculty were able to guide student projects which helped them in securing a post graduate admission in Data Science program.

Hence overall development, career and professional accomplishment for a Data Science aspirant is guaranteed at Sphoorthy Engineering College.

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We would like to thank all the Faculty coordinators,  
Director sir, and Secretary sir for the continuous  
support in making this Possible.