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(Autonomous)

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Programme:

# M.Sc. (Computational Data Science)

M.Sc. (Computational Data Science) is a two year Master's programme which has Intersection of Mathematics, Statistics, Programming, Big-Data and Machine Learning. It is hands on and Case Study based Program. The program primarily aims to cater to the following audience:

- Traditional Science/ Engineering Graduates with good *Mathematical Aptitude*, *Basic Programming Skills* and inclination towards data science.

- Professionals in the workplace who wish to improve their skills for the emerging jobs in data-science related fields.

Data science is a "concept to unify statistics, Data Analytics, Machine Learning and their related methods" in order to "understand and analyse actual phenomena" with data. In other words, the detailed study of the flow of information from structured and unstructured data available with an organization is called data science. It primarily involves obtaining the meaningful insights from the data which is processed through analytical study. The current era is becoming a digital space where each organization deals with large amount of structured and unstructured data on a daily basis. Evolving technologies are leading to cost saving solutions for storage and analysis of such large data. In the current era, for the career progression, one needs to understand the language of data through analytical skill. Hence, it is absolutely necessary nowadays, to develop manpower with a skill to perform data analysis to get meaningful information from the data of different domains such as banking and finance, insurance, agriculture, healthcare, retail, education, social media, manufacturing, transportation, entertainment and so on. As reported recently, with nearly 1,00,000 vacancies, India is the second biggest data analytics jobs hub after the US and demand for data science skill sets is increasing at a very fast pace.

The field of data science has witnessed an immense growth in recent years particularly due to the rise of internet and social media. The exploration of data science by the business world initially started with analysis of business data and hence emphasis was given for financial data analytics. With the increase of multimedia data such as image, video, audio and text, each domain as mentioned above, many a times needs to perform analysis of such multimedia big data. Hence the study of data science includes analysis of multimedia data along with other types of data such as business data and unstructured social media data. In our daily life, now we are capturing data from sources such as i) sensors used in various places like agricultural fields, shopping malls, ii) posts on social media, iii) digital images and videos captured in cell phones and iv) purchase transactions made through e-commerce. Analysis of such big data which could be multimodal in nature is a huge challenge. Modern technologies in the areas of artificial intelligence (AI) and machine learning (ML) are now extensively used to get insights of such big data.

With the availability of modern technologies of data storage, cleaning and computing, the study of data science expanded beyond the boundaries of mathematics and statistics. In modern days the study of data science is constituted with the knowledge of mathematics, statistics and computer science. Data science brings together a lot of skills of these disciplines with adequate domain knowledge to help any organization find ways to i) take major business decisions, ii) reduce costs, iii) get in to new markets, iv) launch a new product or service, v) find the sentiment of the customers, vi) recruiting the best talent and so on.
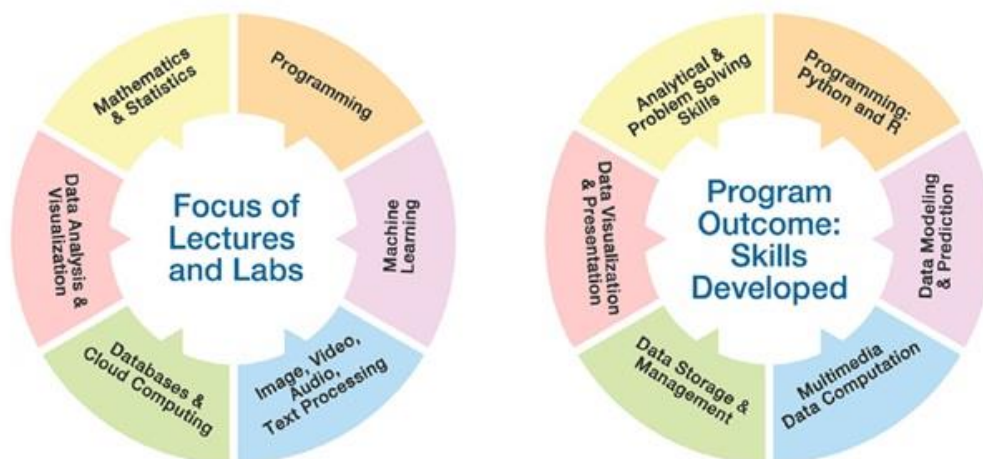
With all these in mind, our new master's program in Data Science not only includes traditional data analysis skills but also incorporates other crucial skills to perform multimedia and big data analysis. The courses focus on acquiring fundamental knowledge of mathematics, statistics, computer science and machine learning. The curriculum also includes

domain specific knowledge by incorporating courses in multimedia, business and finance. Techniques such as data processing, database management, deep learning, data visualization along with tools such as Python, R, and Tableau are also included to enhance the technical and analytical skills. Value Added Courses are offered during the program to make the students hands-on with the challenges of data science and to enable students with industry ready skills. In essence, M.Sc. in Computational Data Science programme has been designed to provide students with a strong foundation in data management and analysis, and the necessary skills to succeed in data science and data-analytics related job.

Based on student requests, **optional** Value Added Courses such as comprehensive SAS training which has variety of tools and applications may be also offered during summer/winter breaks. The SAS based training will also enable the students to obtain SAS global certification in many fields and the skills can be ratified and showcased through SAS international certification badges.

Jobs

The following table shows some of the major job positions you can get after completing this course.

Have a look below:

Data Scientist	A Data Scientist has a major role to play in a Business or solving a problem. Their main role is to provide insightful information and values from a certain set of data after carefully going through the major steps of data science, and suggesting solutions to those problems or doubts.	INR 8.2 LPA
Process Analyst	A process Analyst is an important part of the IT team where he/she analyze the business processes and workflows in order to understand the business pattern and make sure that how these can be automated or increased.	INR 4.3 LPA
Data Solutions Analyst	Data Solutions Analyst usually maintain client-specific data along with useful reports with respect to company policies and procedures. They gather and collect information from the clients, maintain the data warehouse, follow the automated report production process and provide recommendations in case of any negative outcome or result.	INR 11.51 LPA

Business Analyst	A Business Analyst is supposed to analyze the business-related data and provide help in decision making with respect to many new business trends from the technical point of view.	INR 6 LPA
Statistical Analyst	A Statistical Analyst is responsible for collecting, reviewing and extracting valuable information from the data which will further help Business Analysts and Data Scientists in the real-time decision making process.	INR 6.02 LPA
Web & Social Media Analyst	Web & Social Media Analyst is responsible for the evaluation and analyzing user engagement with the help of various software and data structure tools.	INR 3.3 LPA
CRM Analyst	They are responsible for the evaluation of the client-related data provided internally or externally to know their behavior, their pattern and extracting insightful information from it which will help to maintain the relationship with clients by understanding their problem and resolving them on a macro scale.	INR 4.5 LPA
Business Intelligence Analyst	BI Analyst is responsible for transforming a large set of data into valuable information that will hold a business value. They analyse the latest trends and help make the business grow in a smarter and in a much efficient way.	INR 5.8 LPA
Data Architect	A Data Architect is responsible for everything about the company data. They maintain the solid structural database of the company containing all the necessary information. They create database solutions, evaluate requirements and prepare reports.	INR 19.3 LPA
Data Mining Engineer	Data Mining Engineer is responsible for creating and enhancing the statistical and predictive data and models and algorithms to analyse a large set of data.	INR 6.1 LPA
Database Administrator	A DB Administrator is responsible for planning, installing, designing, migrating, monitoring the data by using different software and tools.	INR 4.97 LPA

Data Science is a promising subject in the field of Computer and Information Science. Many foreign companies and national companies are investing in millions in the IT sector in India.

After US, India is expected to be a specialized market for Data Scientists across the globe. This course is not only valuable in India but across the globe. The National Average Salary for Data Scientist is around **INR 11,48,252** and International Average Salary is around **USD**

1,13,436 according to Glassdoor, which means you can easily satisfy your need for career growth and stability.

Admission Process

Admissions to M.Sc. (Computational Data Science) are done on the basis of merit. The government of Andhra Pradesh notifies the admission process and asks registration for convener quota of 32 seats from the students who are qualified in the APPGCET. The remaining 13 seats will be in management quota. For management quota consult the college office or use chat bot for enquiry.

Eligibility

Students who wish to pursue M.Sc. (Computational Data Science) course should fulfil the following eligibility criteria.

- Computer Science / Computer Applications / Mathematics as one of the subjects in Under Graduation or Computer Science/Computer Applications as major.
- They should clear their Under Graduation exam from a recognized University.