



GLOBAL Institute of Engineering & Technology

(Approved by AICTE & Affiliated to JNTUH)

(Recognized Under Section 2(f) Of UGC Act 1956)

Survey No. 179, Chilkur (V), Moinabad (M), Ranga Reddy Dist. T.S.

Phone: 9985096961, 8790101015

E-Mail: principal.giet.u6@gmail.com/gietcsedepartment@gmail.com

JNTUH Code (U6) ECE – EEE – CSE - CIVIL – ME – MBA - M.Tech EAMCET Code - (GLOB)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Mr. Syed Mazharuddin

B.Tech.,M.Tech.,(Ph.D)

Assistant Professor & Head

Lr.No: GIET/CSE/Brdg Cour/001/07/2018-19

Date :09/07/2018

To

The Principal
Global Institute of Engineering & Technology
Moinabad

Respected Sir,

Sub: Permission to Conduct Bridge Course for the Students of CSE-IV Semester-reg.

This is to get it to your kind notice that we Department of Computer Science and Engineering are interested to conduct a Bridge Course On **Data Science** to the students of CSE-IV Year from 16/07/2018 to 21/07/2018, which is undertaken for students benefit as a value addition to curriculum of course.

These classes help students to strengthen their basics and bridge gap between Academics and Industry. These classes give them a brief idea of Data Science in Computer science Engineering.

Kindly accord approval so as to make necessary arrangements for conducting the classes for students of Computer Science and Engineering IV Year – Academic Year: 2018-19.

Thanking you.

H.O.D

HEAD

Department of Computer Science & Engg.
Global Institute of Engineering & Technology
Chilkur (V), Moinabad (M), R.R. Dist.T.S.-501504.

Cc to :

Director – for information

Dy. Director- for information

Dean – for information



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Mr. Syed Mazharuddin

B.Tech.,M.Tech.,(Ph.D)

Assistant Professor & Head

Lr.No: GIET/CSE/Brdg Cour/006/07/2018-19

Date : 12/07/2018

CIRCULAR

All the students of CSE-IV Year are informed to express their interest by enrolling their name for the One week Bridge course on “**Data Science**” starting from 16/07/2018 to 21/07/2018. The detailed syllabus for the course is attached for your information. Concerned mentors are instructed to submit the list of students enrolled within two days to the undersigned. For further information, you can contact the Course Coordinator.

H.O.D

HEAD

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Global Institute of Engineering & Technology
Chilkur (V), Moinabad (M), R.R. Dist.T.S.-501504.

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Notice board

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Department of Computer Science and Engineering

COURSE SYLLABUS FOR “DATA SCIENCE”

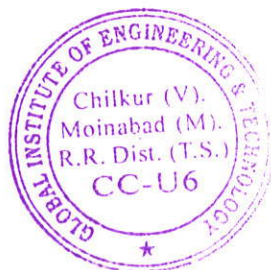
<u>S.no</u>	Topics to delivered	Duration Class work +Lab Practice (in hours)
1	Introduction To Data Science	6
2	In Detail Explanation of Data Science	6
3	Business Intelligence (BI) vs. Data Science	6
4	Life cycle of Data Science	6
5	Applications Of Data Science	6
6	Qualities Need To Be A Data Scientists.	6

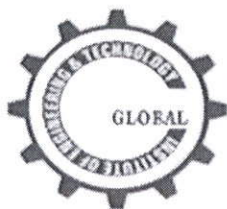

COORDINATOR


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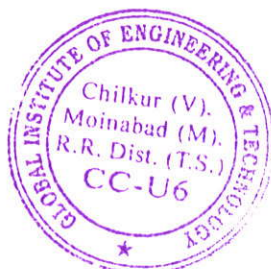
Department of Computer Science and Engineering

LIST OF STUDENTS ENROLLED FOR BRIDGE COURSE

ACADEMIC YEAR: 2018-2019

S.No	Roll No	Name Of The Student	Year	Dept
1	15U61A0501	ALLADI MANISHA	IV	CSE
2	15U61A0502	AMBATI BHARATHRAJ	IV	CSE
3	15U61A0503	AMEENA JABEEN	IV	CSE
4	15U61A0505	BOJJA AKHIL	IV	CSE
5	15U61A0506	CHITLA NIKHIL	IV	CSE
6	15U61A0508	FATIMA BEGUM	IV	CSE
7	15U61A0509	GURRAM SHRAVYA	IV	CSE
8	15U61A0511	KOTHAKURUMA PADMA	IV	CSE
9	15U61A0512	L RAVI KUMAR	IV	CSE
10	15U61A0514	MEERABOINA SHIVA KISHORE	IV	CSE
11	15U61A0519	NAGGARI SHRAVAN REDDY	IV	CSE
12	15U61A0520	NAHID SABA	IV	CSE
13	15U61A0522	SHAHEEN BEGUM	IV	CSE
14	15U61A0523	SHAIK SHEREEN	IV	CSE
15	15U61A0526	TAUSEEF AKRAM	IV	CSE


COORDINATOR




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Bridge Course


On

Data Science

(16th July to 21th July 2018)

PROGRAMME SCHEDULE

	Programme	
Day1	INAUGURATION	Introduction To Data Science: Mrs. Srivani, Assistant Professor, SWCET, Hyderabad
Day2	What is Data Science? Mrs. Srivani Assistant Professor SWCET Hyderabad	
Day3	Business Intelligence (BI) vs. Data Science Mrs. Srivani Assistant Professor SWCET Hyderabad	
Day4	Life cycle of Data Science Ms. Shilpa Assistant Professor SWCET Hyderabad	
Day5	Applications Of Data Science Ms. Shilpa Assistant Professor SWCET Hyderabad	
Day6	What Qualities Are Needed To Be A Data Scientists. Ms. Shilpa Assistant Professor SWCET Hyderabad	


Coordinator
Mrs. M Shirisha
Assistant Professor
GIET



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BRIDGE COURSE
 On
 DATA SCIENCE

ATTENDANCE SHEET

S.No	Roll Number	Name of the Participant	Programme	Year	ATTENDANCE					
					Day-1 (16/07/2018)	Day-2 (17/07/2018)	Day-3 (18/07/2018)	Day-4 (19/07/2018)	Day-5 (20/07/2018)	Day-6 21/7/2018
1	15U61A0501	ALLADI MANISHA	IV	CSE	FN	AN	FN	AN	FN	AN
2	15U61A0502	AMBATI BHARATHRAJ	IV	CSE	FN	AN	FN	AN	FN	AN
3	15U61A0503	AMEENA JABEEN	IV	CSE	FN	AN	FN	AN	FN	AN
4	15U61A0505	BOJJA AKHIL	IV	CSE	FN	AN	FN	AN	FN	AN
5	15U61A0506	CHITLA NIKHIL	IV	CSE	FN	AN	FN	AN	FN	AN
6	15U61A0508	FATIMA BEGUM	IV	CSE	FN	AN	FN	AN	FN	AN
7	15U61A0509	GURRAM SHRAVYA	IV	CSE	FN	AN	FN	AN	FN	AN
8	15U61A0511	KOTHAKURUMA PADMA	IV	CSE	FN	AN	FN	AN	FN	AN
9	15U61A0512	L RAVI KUMAR	IV	CSE	FN	AN	FN	AN	FN	AN
10	15U61A0514	MEERABOINA SHIVA KISHORE	IV	CSE	FN	AN	FN	AN	FN	AN
11	15U61A0519	NAGGARI SHRAVAN REDDY	IV	CSE	FN	AN	FN	AN	FN	AN
12	15U61A0520	NAHID SABA	IV	CSE	FN	AN	FN	AN	FN	AN
13	15U61A0522	SHAHEEN BEGUM	IV	CSE	FN	AN	FN	AN	FN	AN
14	15U61A0523	SHAIK SHEREEN	IV	CSE	FN	AN	FN	AN	FN	AN
15	15U61A0526	TAUSEEF AKRAM	IV	CSE	FN	AN	FN	AN	FN	AN

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Attendance Sheet of Bridge course on " Data Science "

S.NO	H.T.No	NAME OF THE PARTICIPANT	Year	Dept	16/7/2	17/7/2	18/7/2	19/7/2	20/7/2	21/7/2	T	Percentage
1	15U61A0501	ALLADI MANISHA	IV	CSE	6	6	6	6	6	6	36	100
2	15U61A0502	AMBATI BHARATHRAJ	IV	CSE	6	6	6	6	6	6	36	100
3	15U61A0503	AMEENA JABEEN	IV	CSE	6	6	6	6	6	0	30	83.33333333
4	15U61A0505	BOJJA AKHIL	IV	CSE	6	6	6	6	6	6	36	100
5	15U61A0506	CHITLA NIKHIL	IV	CSE	6	6	6	6	6	6	36	100
6	15U61A0508	FATIMA BEGUM	IV	CSE	6	6	6	6	6	6	36	100
7	15U61A0509	GURRAM SHRAVYA	IV	CSE	6	0	6	6	6	0	24	66.66666667
8	15U61A0511	KOTHAKURUMA PADMA	IV	CSE	6	6	6	6	6	0	30	83.33333333
9	15U61A0512	L.RAVI KUMAR	IV	CSE	6	6	6	6	6	6	36	100
10	15U61A0514	MEERABOINA SHIVA KISHORE	IV	CSE	6	6	6	6	6	6	36	100
11	15U61A0519	NAGGARI SHRAVAN REDDY	IV	CSE	6	0	6	6	6	0	24	66.66666667
12	15U61A0520	NAHID SABA	IV	CSE	6	6	6	6	6	6	36	100
13	15U61A0522	SHAHEEN BEGUM	IV	CSE	6	6	6	0	6	6	30	83.33333333
14	15U61A0523	SHAIK SHEREEN	IV	CSE	6	6	6	6	6	6	36	100
15	15U61A0526	TAUSEEF AKRAM	IV	CSE	6	6	6	6	6	6	36	100




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Global Institute of Engineering & Technology
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Bridge Course

On

DATA SCIENCE

(16th July – 21th July 2018)

FEEDBACK FORM

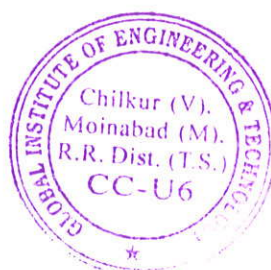
Please evaluate your rating of the course by placing a tick in the appropriate box.

1. Poor 2. Satisfactory 3. Good 4. Very good 5. Excellent

Branch and Year: *CSE IV*

Date: *21/07/2018*

ASPECTS	RATING				
	Excellent 5	Very good 4	Good 3	Satisfactory 2	Poor 1
Relevance of contents		<input checked="" type="checkbox"/>			
Trainer was knowledgeable and skillful	<input checked="" type="checkbox"/>				
Quality of input provided		<input checked="" type="checkbox"/>			
Quality of presentations	<input checked="" type="checkbox"/>				
Adherence to the time schedule		<input checked="" type="checkbox"/>			
Opportunity given to participant to clear doubts	<input checked="" type="checkbox"/>				
Identify ways to build on current skills and knowledge		<input checked="" type="checkbox"/>			
Overall learning experience	<input checked="" type="checkbox"/>				
How has the course enhanced your skills or understanding of this topic? <i>learned new topics</i>					
Specify problems faced by you during the course? <i>No problem</i>					
Any Other Comments: <i>I want one more course</i>					





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Department of Computer Science and Engineering

Department of Computer Science and Engineering

Bridge Course

On

DATA SCIENCE

From

16-07-2018 to 21-07-2018

CSE-IV

ACADEMIC YEAR- 2018-19

A Bridge course on 'Data Science' was organized by the Department of Computer Science and Engineering for Final Year Students. A One Week Bridge course was held in the Room No 65 from 16th July -21st July 2018 and its objective was to further enhance and strengthen the technical skills of the students in Computer Science. The course was attended by 15 students (A.Y. 2018-19).

About Bridge Course: The Bridge Course is aimed to act as a buffer for the students, with an objective to provide adequate time for the transition to hard-core engineering courses. During this interaction of bridge course week with the faculty and their classmates, the students will be equipped with the knowledge and the confidence needed to take on bigger challenges as future engineers of this country.

Objectives:

- To provide adequate time for the transition to hard-core engineering courses.
- Focus on fostering a strong sense of ethical judgment and moral fortitude.
- Applications based self-learning and intermingling of a large cross section of students from vastly varying backgrounds.
- The students will be equipped with the knowledge and the confidence needed to take on bigger challenges.
- Nurture a deeper understanding of the local and global world and our place in it as concerned citizens of the world.
- Interactive and Active Learning by Doing have been weaved into the Bridge Course.
- Active learning with the help of other students



HEAD

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DAY 1:

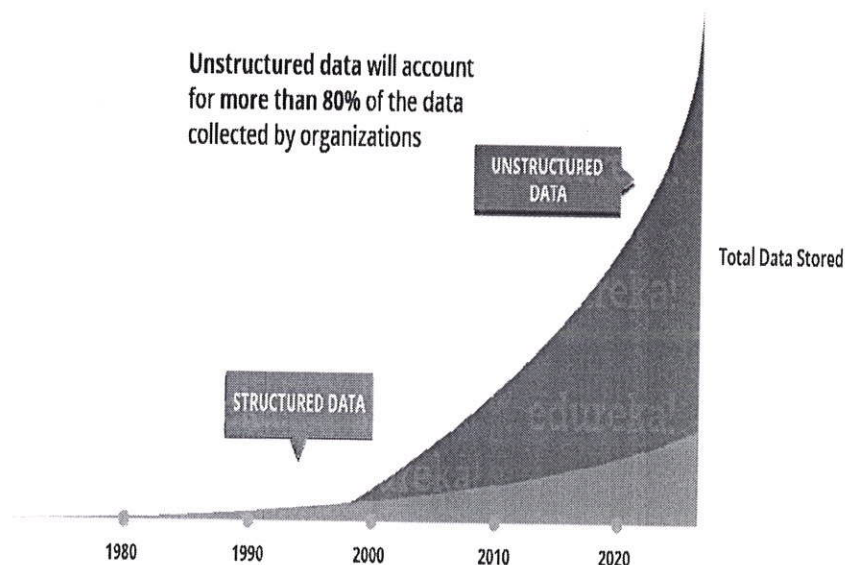
INTRODUCTION TO DATA SCIENCE:

As the world entered the era of big data, the need for its storage also grew. It was the main challenge and concern for the enterprise industries until 2010. The main focus was on building framework and solutions to store data. Now when Hadoop and other frameworks have successfully solved the problem of storage, the focus has shifted to the processing of this data. Data Science is the secret sauce here. All the ideas which you see in Hollywood sci-fi movies can actually turn into reality by Data Science. Data Science is the future of Artificial Intelligence. Therefore, it is very important to understand what is Data Science and how can it add value to your business.

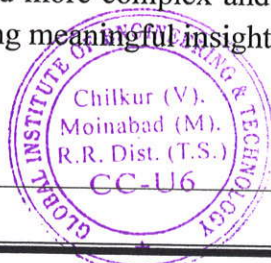
- The need for Data Science.
- What is Data Science?
- How is it different from Business Intelligence (BI) and Data Analysis?
- The lifecycle of Data Science with the help of a use case.

Why We Need Data Science

- Traditionally, the data that we had was mostly structured and small in size, which could be analyzed by using the simple BI tools. Unlike data in the traditional systems which was mostly structured, today most of the data is unstructured or semi-structured. Let's have a look at the data trends in the image given below which shows that by 2020, more than 80% of the data will be unstructured.



This data is generated from different sources like financial logs, text files, multimedia forms, sensors, and instruments. Simple BI tools are not capable of processing this huge volume and variety of data. This is why we need more complex and advanced analytical tools and algorithms for processing, analyzing and drawing meaningful insights out of it.



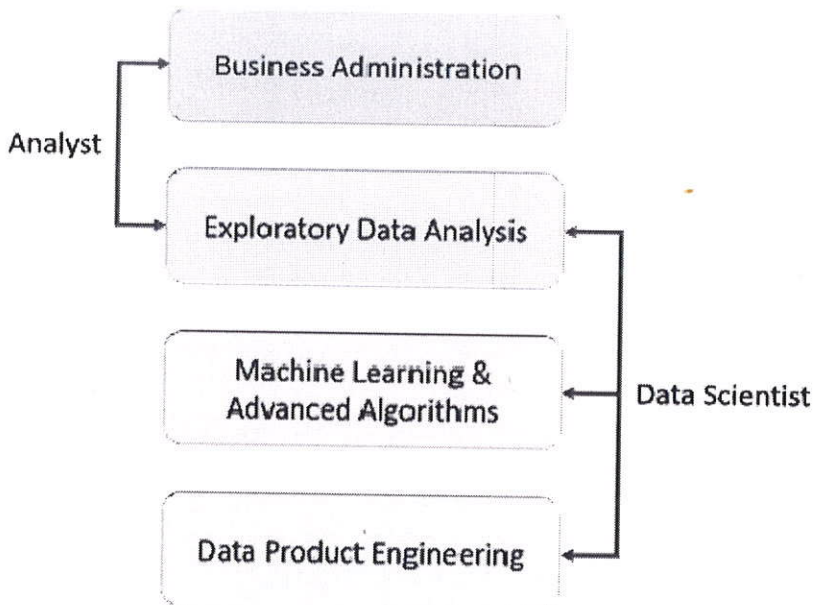
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DAY 2:

What is Data Science?

Use of the term Data Science is increasingly common, but what does it exactly mean? What skills do you need to become Data Scientist? What is the difference between BI and Data Science? How are decisions and predictions made in Data Science? These are some of the questions that will be answered further.



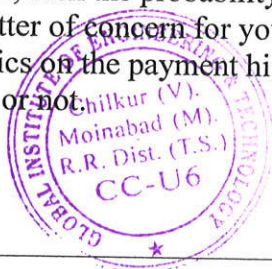
First, let's see what is Data Science. Data Science is a blend of various tools, algorithms, and machine learning principles with the goal to discover hidden patterns from the raw data. How is this different from what statisticians have been doing for years?

The answer lies in the difference between explaining and predicting.

As you can see from the above image, a Data Analyst usually explains what is going on by processing history of the data. On the other hand, Data Scientist not only does the exploratory analysis to discover insights from it, but also uses various advanced machine learning algorithms to identify the occurrence of a particular event in the future. A Data Scientist will look at the data from many angles, sometimes angles not known earlier.

So, Data Science is primarily used to make decisions and predictions making use of predictive causal analytics, prescriptive analytics (predictive plus decision science) and machine learning.

- **Predictive causal analytics** – If you want a model which can predict the possibilities of a particular event in the future, you need to apply predictive causal analytics. Say, if you are providing money on credit, then the probability of customers making future credit payments on time is a matter of concern for you. Here, you can build a model which can perform predictive analytics on the payment history of the customer to predict if the future payments will be on time or not.



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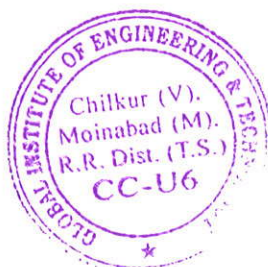
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- **Prescriptive analytics:** If you want a model which has the intelligence of taking its own decisions and the ability to modify it with dynamic parameters, you certainly need prescriptive analytics for it. This relatively new field is all about providing advice. In other terms, it not only predicts but suggests a range of prescribed actions and associated outcomes.
- The best example for this is Google's self-driving car which I had discussed earlier too. The data gathered by vehicles can be used to train self-driving cars. You can run algorithms on this data to bring intelligence to it. This will enable your car to take decisions like when to turn, which path to take, when to slow down or speed up.
- **Machine learning for making predictions** — If you have transactional data of a finance company and need to build a model to determine the future trend, then machine learning algorithms are the best bet. This falls under the paradigm of supervised learning. It is called supervised because you already have the data based on which you can train your machines. For example, a fraud detection model can be trained using a historical record of fraudulent purchases.
- **Machine learning for pattern discovery** — If you don't have the parameters based on which you can make predictions, then you need to find out the hidden patterns within the dataset to be able to make meaningful predictions. This is nothing but the unsupervised model as you don't have any predefined labels for grouping. The most common algorithm used for pattern discovery is Clustering.
Let's say you are working in a telephone company and you need to establish a network by putting towers in a region. Then, you can use the clustering technique to find those tower locations which will ensure that all the users receive optimum signal strength.

DAY 3:

Business Intelligence (BI) vs. Data Science

- BI basically analyzes the previous data to find hindsight and insight to describe the business trends. BI enables you to take data from external and internal sources, prepare it, run queries on it and create dashboards to answer the questions like quarterly revenue analysis or business problems. BI can evaluate the impact of certain events in the near future.
- Data Science is a more forward-looking approach, an exploratory way with the focus on analyzing the past or current data and predicting the future outcomes with the aim of making informed decisions. It answers the open-ended questions as to "what" and "how" events occur.

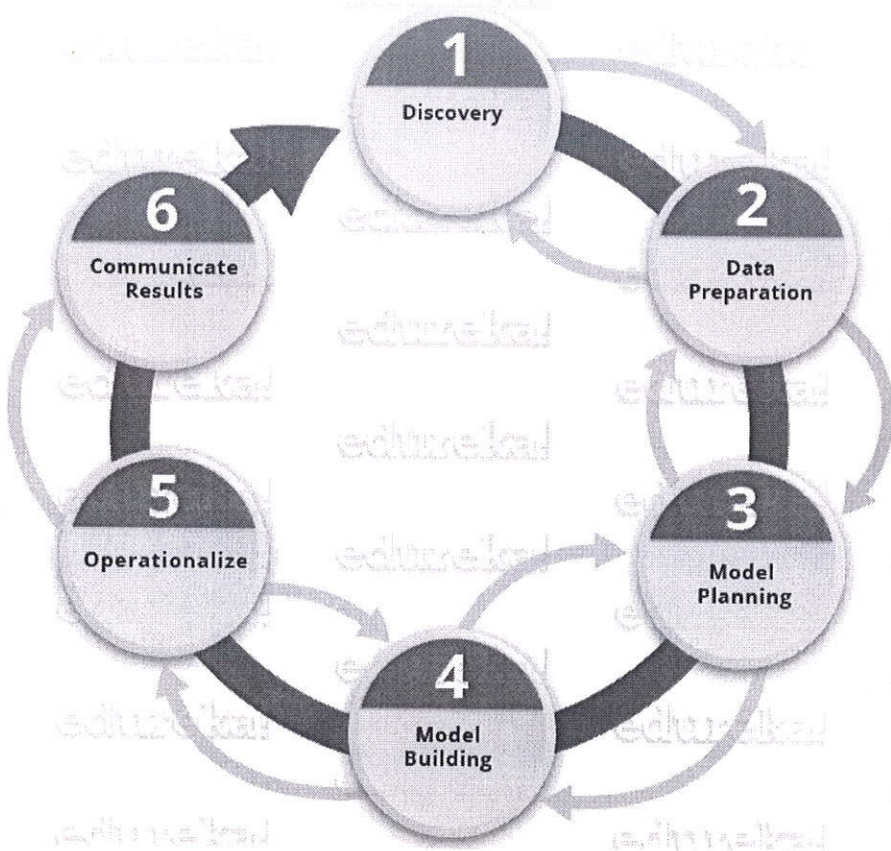


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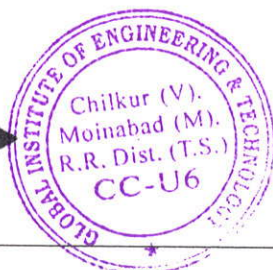
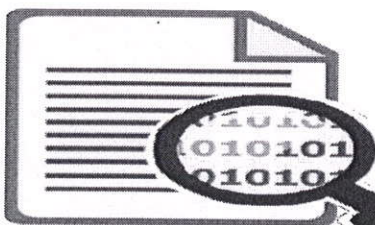
DAY 4:

Life cycle of Data Science

Here is a brief overview of the main phases of the Data Science Lifecycle



Phase 1—Discovery: Before you begin the project, it is important to understand the various specifications, requirements, priorities and required budget. You must possess the ability to ask the right questions. Here, you assess if you have the required resources present in terms of people, technology, time and data to support the project. In this phase, you also need to frame the business problem and formulate initial hypotheses (IH) to test.



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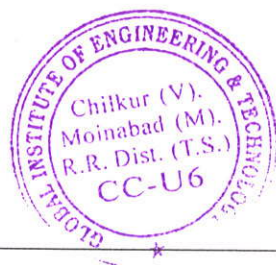
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DAY 5:

APPLICATIONS OF DATA SCIENCE:

- How about if you could understand the precise requirements of your customers from the existing data like the customer's past browsing history, purchase history, age and income. No doubt you had all this data earlier too, but now with the vast amount and variety of data, you can train models more effectively and recommend the product to your customers with more precision. Wouldn't it be amazing as it will bring more business to your organization?
- Let's take a different scenario to understand the role of Data Science in decision making. How about if your car had the intelligence to drive you home? The self-driving cars collect live data from sensors, including radars, cameras and lasers to create a map of its surroundings. Based on this data, it takes decisions like when to speed up, when to speed down, when to overtake, where to take a turn – making use of advanced machine learning algorithms.
- Let's see how Data Science can be used in predictive analytics. Let's take weather forecasting as an example. Data from ships, aircrafts, radars, satellites can be collected and analyzed to build models. These models will not only forecast the weather but also help in predicting the occurrence of any natural calamities. It will help you to take appropriate measures beforehand and save many precious lives.



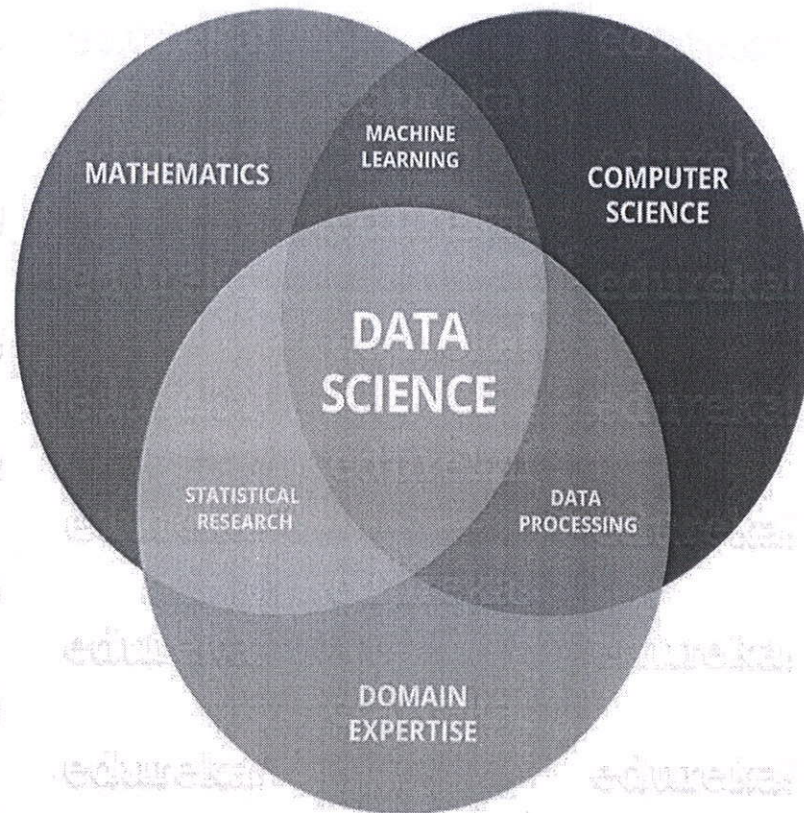

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DAY 6:

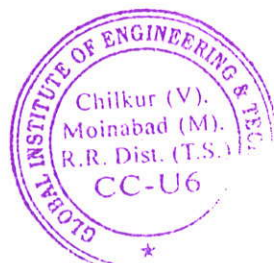
What Qualities Are Needed To Be A Data Scientists.


Being a Data Scientist is easier said than done. So, let's see what all you need to be a Data Scientist. A Data Scientist requires skills basically from three major areas as shown below.



As you can see in the above image, you need to acquire various hard skills and soft skills. You need to be good at *statistics* and *mathematics* to analyze and visualize data. Needless to say, *Machine Learning* forms the heart of Data Science and requires you to be good at it. Also, you need to have a solid understanding of the *domain* you are working in to understand the business problems clearly. Your task does not end here. You should be capable of implementing various algorithms which require good *coding* skills. Finally, once you have made certain key decisions, it is important for you to deliver them to the stakeholders. So, good *communication* will definitely add brownie points to your skills.

I urge you to see this Data Science video tutorial that explains what is Data Science and all that we have discussed in the blog. Go ahead, enjoy the video and tell me what you think.




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