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Short Term Training Program (STTP) on
"Application of Data Analytics for Mechanical Engineering"
21st and 22nd July 2023

STTP on "Application of Data Analytics for Mechanical Engineering"

In association with **ISTE, IIEC, and IQAC – MVJCE**

Date of the Event	21st and 22nd July 2023
Title of the Event	Short Term Training Program (STTP) on "Application of Data Analytics for Mechanical Engineering"
Number of Sessions	03
Chief Guest	**Dr. Jagadish,** SQC & OR unit, Indian Statistical Institute, Bangalore
Resource Speakers	• **Dr. Jagadish,** SQC & OR unit, Indian Statistical Institute, Bangalore. • **Mr. Rajiv Chemudupati,** Senior Data Scientist, Jio Platforms Limited, Bangalore. • **Mr. Sachin S Thimmapur**, Senior Software Engineer at Oracle
Organized by	Department of Mechanical Engineering, in association with ISTE, IIEC, and IQAC – MVJCE

Data analytics is the process of examining, cleaning, transforming, and interpreting data to uncover meaningful insights and support decision-making. It involves using various techniques, tools, and methodologies to analyze large volumes of data to extract valuable information, trends, patterns, and correlations. In this purview, the Department of Mechanical Engineering, in association with ISTE, IIEC and IQAC – MVJCE, organized a Two Day Short Term Training Program (STTP) on "Application of Data Analytics for Mechanical Engineering" on 21st and

22nd July 2023. The STTP was designed to provide insights into the basics and application of DATA ANALYTICS. 45 participants (36 students from IV semester ME and 9 Faculty members) benefited from this program.

Sessions were conducted in CIM Lab (Room No. 029)

Eminent scholars from premier academic institutes and industries were invited to conduct the session and deliver their domain knowledge and expertise in DATA ANALYTICS.

Day 1: 21st July 2023 (Friday)

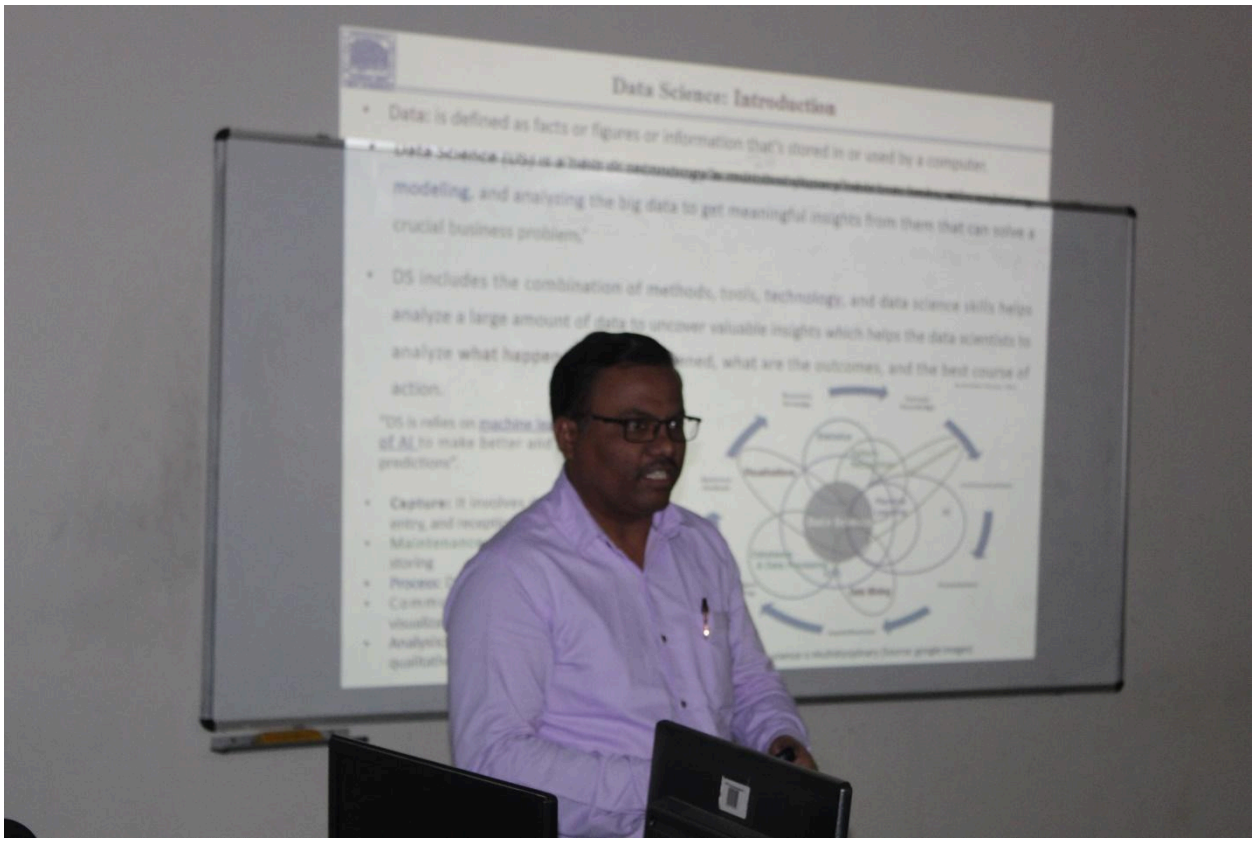
Dr. Shrinivas L Gombi, Head of the Department welcoming the Chief Guest

The inauguration of the STTP began at 10.30 am in CIM Lab (Room No. 043). Dr. Shrinivas L Gombi, HOD & Dean (Academics) welcomed the Chief Guest, Speakers and all participants to the program and thanked the esteemed management and distinguished Principal of MVJ College of Engineering, Dr. V Suresh Babu, Vice Principal, Dr. M Brindha madam and the faculty members of the department.

Chief Guest, Dr. Jagadish, SQC & OR unit, Indian Statistical Institute, Bangalore called upon the faculty members, research scholars and young students to understand the need for Data Analytics. Dr. Jagadish, further highlighted the significance of data analytics in mechanical engineering. He delivered session from 11.00 am to 01.15 pm.

Chief Guest of the Event Dr. Jagadish, SQC & OR unit, Indian Statistical Institute, Bangalore, highlighting the Application of DATA ANALYTICS in different domains of Engineering.

The Day 1 was concluded on a happy note with the participants expressing their heartfelt gratitude to the organizers for organizing the informative Short Term Training Program on DATA ANALYTICS. The students were asked to come up with few examples in mechanical engineering, where data analytics plays an important role.



Chief Guest of the Event Dr. Jagadish, SQC & OR unit, Indian Statistical Institute, Bangalore giving his presentation.

Day 2: 22nd July 2023 (Saturday)

The forenoon session on the Day 2 started at 10.30 am and extended till 01.00 pm with the resource person, **Mr. Rajiv Chemudupati**, Senior Data Scientist, Jio Platforms Limited, Bangalore giving a real time exposure on Data analytics. The resource person gave an exhaustive overview of the tools used for data analytics. He emphasized on the Auto Machine Learning with Industrial Applications.

Dr. Shrinivas L Gombi, Dean (Academics) with the chief guest Mr. Rajiv Chemudupati, Senior Data Scientist, Jio Platforms Limited, Bangalore and the faculty members of the department

Here are some of the key aspects of his presentation.

- Data Collection: Gathering relevant data from various sources, such as databases, spreadsheets, APIs, sensors, social media, and more.
- Data Cleaning: Preprocessing the data to remove errors, inconsistencies, and irrelevant information. This step is crucial to ensure the quality and reliability of the analysis.
- Data Transformation: Converting data into a suitable format for analysis. This may involve normalization, aggregation, or other operations to make the data more understandable and comparable.
- Exploratory Data Analysis (EDA): This involves visually exploring the data to understand its distribution, relationships between variables, and potential outliers.

- Statistical Analysis: Applying statistical techniques to identify patterns, trends, and relationships in the data. This may include regression analysis, hypothesis testing, and more.
- Machine Learning: Utilizing machine learning algorithms to build predictive models, classify data, or perform clustering based on patterns in the data.
- Data Visualization: Creating meaningful and informative visual representations of the data, such as charts, graphs, and dashboards, to communicate insights effectively.
- Business Intelligence: Using data analytics to support strategic decision-making within an organization, often involving the use of dashboards and reports.
- Predictive Analytics: Forecasting future trends based on historical data, using techniques like time series analysis and predictive modeling.
- Prescriptive Analytics: Going beyond prediction to recommend actions to optimize outcomes based on the insights derived from the data.

Dr. Shrinivas L Gombi, Head of the Department and Dean (Academics) with the chief guest Mr. Rajiv Chemudupati, Senior Data Scientist, Jio Platforms Limited, and

highlighting the significance of Data Analytics, and Machine Learning for Mechanical Engineering Students

Mr. Rajiv Chemudupati, Senior Data Scientist, Jio Platforms Limited, explaining as to how fault prediction can be done in robotics and power grids using Data Analytics.

The forenoon session in the morning was followed by an afternoon session from 01.30 PM to 03.30 PM on Mathematical models for Data Analytics by Mr. Sachin S Thimmapur, Senior Software Engineer at Oracle. He gave an exposure on Tableau, R Language and Data sorting. Especially the session for useful for students and faculty to analyse and represent their research data graphically. The sessions were very well accepted by the participants and concluded on a learning note with participants expressing their desire to try the data interpretations.

Dr. Shrinivas L Gombi, Head of the Department and Dean (Academics) with the chief guest Mr. Sachin S Thimmapur, Senior Software Engineer at Oracle and faculty members

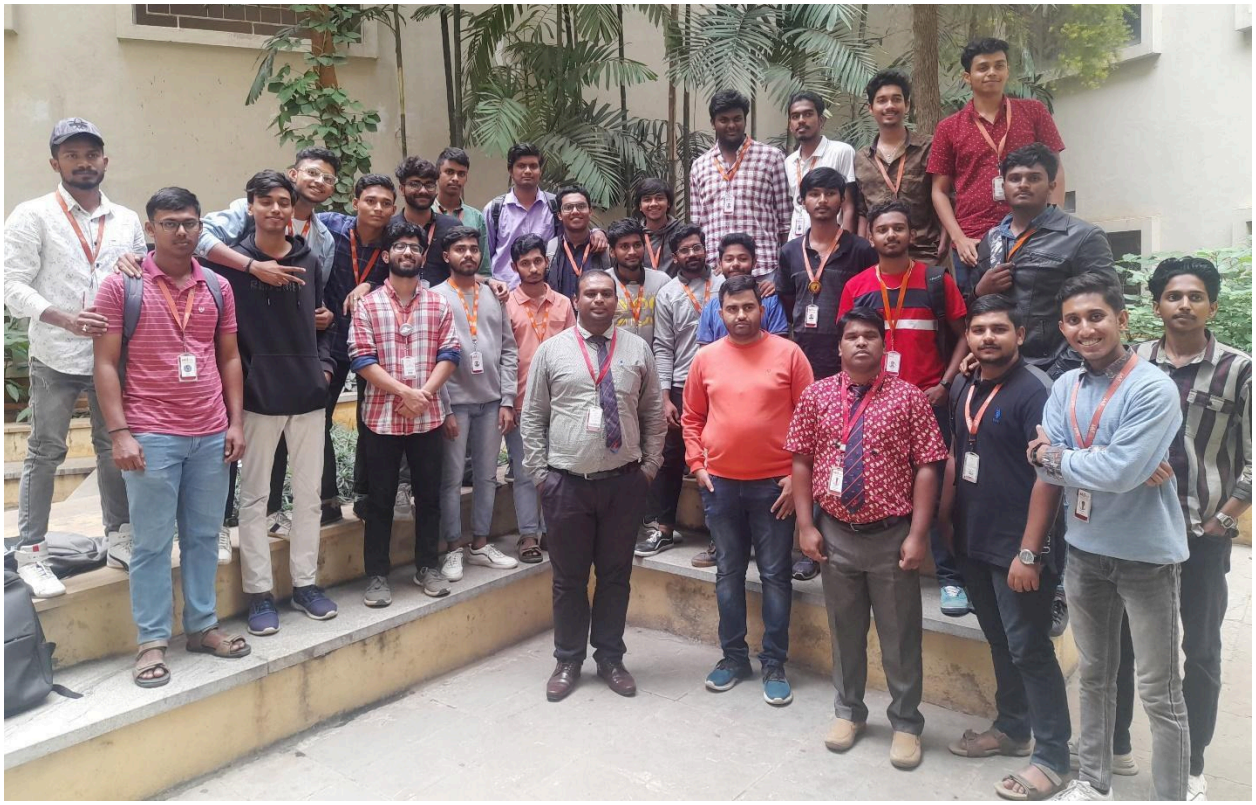
Mr. Sachin S Thimmapur, Senior Software Engineer at Oracle delivering the session on Data Analytics

Valedictory Session

Dr. Santhosh N, Associate Professor, Department of Mechanical Engineering MVJCE gave an overview of the different sessions and valuable information shared by all speakers. Dr. Rajesh Kumar P, Assistant Professor, Department of Mechanical Engineering, MVJCE provided concluding remarks and thanked each and every resource speaker for accommodating the sessions in their busy schedules. STTP concluded with vote of thanks to the Management, Principal, Vice Principal, COE and Registrar, and Special mention to HoD of Mechanical Engineering Department and Dean (Academics) Dr. Shrinivas L Gombi Sir and the Organizing committee,

Outcome of the STTP:

The STTP has enlightened the participants on how to use the DATA ANALYTICS for solving problems in Mechanical Engineering. The sessions have helped our students and faculty members use the data analytics tool for solving mechanical engineering problems.



Mr. Sachin S Thimmapur, Senior Software Engineer at Oracle with students and faculty members after the valedictory session