



## **Guest Lecture on Data Analytics using Python and applications of Data Science**

### **Objectives of the Guest Lecture:**

- ❖ To guide the students and faculty members about the primary goal of a data analyst is to increase efficiency and improve performance by discovering patterns in data.
- ❖ To assist participants in understanding Data analysis IT industry point of view.

**Date:** 10th December 2021

**Time:** 2:00 pm to 4:00 pm

**Venue:** Google Meet

**Speaker:** Vaibhav Raja

**Coordinator:** Mr.D.Sudhagar, Associate Professor, Department of Information Technology

**Participants:** 90+ students and 10+ faculty members participated in the workshop.

### **Summary:**

Information Technology Department of Jerusalem College of Engineering organized a Guest Lecture on "Data Analytics using Python and Applications of Data Science" in association with EPOC CLUB of IT and Association of Information of Technologists [AIT], on 10th December 2021. The Guest Lecture was aimed to guide the participants on mind-set required for data analytics and the application of data science.

Prof. K.Sundaramoorthy Prof&Head-IT Department commenced the session at 2:00 pm by introduced eminent speaker Ms.Preethi S, III/IT, and then Mr. Prashanth.K, III-IT presided over welcome speech.

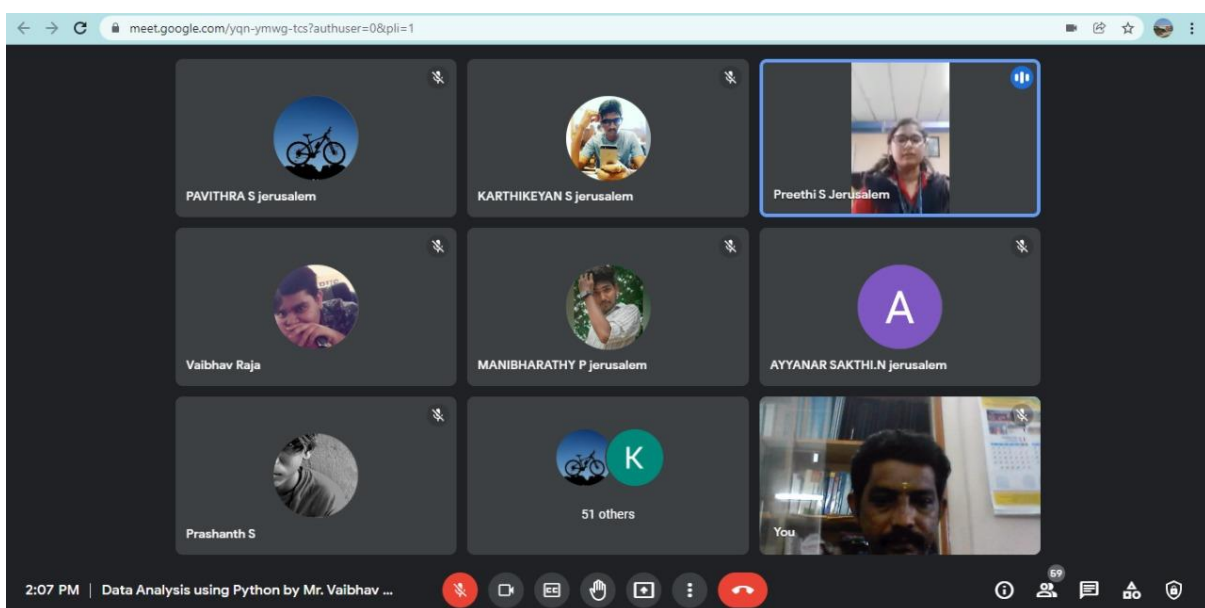
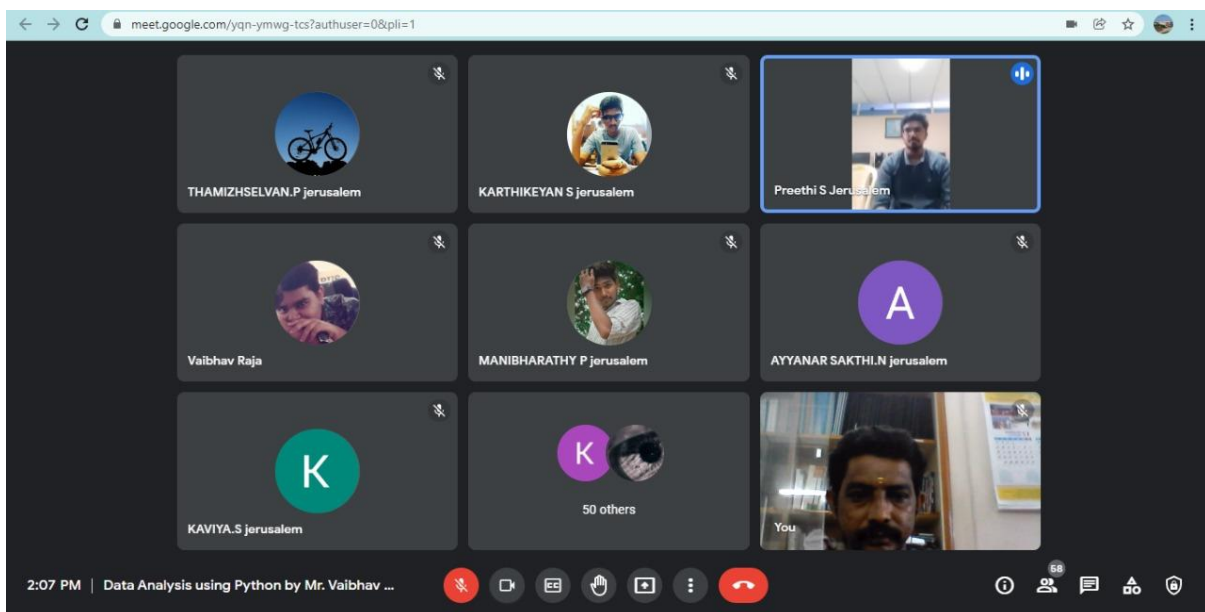
The main resource person for the course Mr.Vaibhav Raja is a Data Scientist and Research Scholar at Object Automation Software Solutions, a leading Data Science Company in Chennai and has completed B.Tech in Information Technology at Jerusalem College of Engineering, Chennai. He has given 20+ webinars and faculty development programs to SASTRA University, Jain University Bangalore, SRM Ramapuram, SRIT Andhra Pradesh, the New College Chennai and much more institutions. Recently, he has also delivered on "AI Applications on POWER9 System" at the OpenPOWER Virtual Summit, an International Summit on October 2021. He is having a good knowledge in Programming Languages and interested in adding new skills to his repertoire. He is proficient in Machine Learning and Deep Learning Programs and currently working on ML use-cases using IBM's AIX OS.

The contents covered in the session included in detail about what is data science, real time examples of data analytics with python, how to use jupyter notebooks, introduction to numpy and pandas and finally reading data file from CSV files.

Finally the session was concluded by vote of thanks by Mr.Aravindharaj III-IT. We acknowledge and thank management of Jerusalem College of Engineering for providing the necessary infrastructure for conducting the workshop. We also thank Dr.S.Ramesh – Principal/JCE, Dr. Ramalingam-Director/JCE, Dr.Anuradha-Dean Academics/ JCE for her guidance and motivation in organizing the event.

Herewith we have attached some glimpses of our Guest Lecture.

### PHOTO GLIMPSES



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Vaibhav Raja is presenting

**Data Science Roadmap for 2021**

The diagram is a mind map centered on 'Data Science'. It branches into four main areas:

- Python Programming:** Data Structures (lists/dict), SQL, scripting, Conditional, Loops/Iteration, Object-oriented programming, Working with external libraries, Fundamental algorithms - searching, sorting, trees, graphs, etc., Advanced Functional programming.
- Data Extraction and Wrangling:** Data format/type conversion, Libraries - Pandas and NumPy, Data Transformation - joining, slicing, indexing, Handling missing values - can use tools like Inflicto.
- Statistics and Mathematics:** Descriptive - mean, median, mode, std, etc., Inferential - hypothesis & A/B testing, CI, p-value, Experiment Design, Probability - conditional, Bayes theorem, etc., ANOVA, Chi-Square test, Sampling, Data distributions, t-test, Linear Algebra, Single and multivariate calculus.
- Machine Learning:** Supervised - classification, regression, Unsupervised - clustering, dimensionality reduction, Reinforcement learning - TD Agents, optimality rewards, Performance metrics - RMSE, accuracy, confusion matrix, AUC, ROC, etc., Hyperparameter tuning, Statistical ML - SVM, Decision Trees, Bagging, Boosting, Ensemble Models - Random forests, voting classifiers, ensemble.

Other branches include: **ETL Programming** (Strong programming skills, Working with OJ, Building ETL pipelines, Using tools - Spark, Kafka, Airflow, etc., Cloud Services - AWS, GCP, Azure, Algorithms - MapReduce, YARN, Deploying ML models in production) and **BI EDA, Business document and Storytelling** (Profile Data Analyst, Business Analyst, Marketing Analyst, Data Product Manager).

2:20 PM | Data Analysis using Python by Mr. Vaibhav ...

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Vaibhav Raja is presenting

**Introduction to Data Analysis**

Vaibhav Raja  
Research Scholar  
Object Automation Software Solutions

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2:11 PM | Data Analysis using Python by Mr. Vaibhav R...

Vaibhav Raja is presenting

**Agenda**

1. What is Data Science?
2. Real example Data Analysis with Python
3. How to use Jupyter Notebooks
4. Intro to NumPy
5. Intro to Pandas
6. Reading Data from CSV files.

2:11 PM | Data Analysis using Python by Mr. Vaibhav R...

## POSTER



**JERUSALEM COLLEGE OF ENGINEERING**  
(AN AUTONOMOUS INSTITUTION)

DEPARTMENT OF INFORMATION TECHNOLOGY  
***GUEST LECTURE ON DATA ANALYSIS  
USING PYTHON AND APPLICATIONS  
OF DATA SCIENCE***

**Mr. Vaibhav Raja**  
Research Scholar,  
Object Automation Software Solutions, Chennai



**Date : 10-12-2021**  
**Time : 2.00 pm**  
**Venue : Online**

<b>Mr.D. SUDHAGAR</b> PROGRAM COORDINATOR	<b>Dr.K. SUNDARAMOORTHY</b> HOD, IT	<b>Dr. RAMESH S</b> PRINCIPAL
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