Data Analysis & Data Visualization Course Curriculum

Introduction to Data Analysis

- Introduction to Data Analysis and its importance
- Introduction to NumPy: Arrays, numerical operations and data manipulation
- Introduction to Pandas: DataFrames, data cleaning, filtering, grouping and merging. Techniques for data preprocessing and feature engineering

Data Manipulation with NumPy and Pandas

- Techniques for handling missing data, duplicates, and data imputation.
- Utilizing Pandas to group and aggregate data for insightful analysis.
- Calculating and interpreting summary statistics for datasets.
- Exploratory Data Analysis (EDA) using Python libraries such as NumPy, Pandas

Data Visualization

- Principles and best practices of Data Visualization
- Visualization techniques using Python libraries like Bokeh
- Creating basic plots like line plots, bar charts, scatter plots, and histograms.
- Creating informative and visually appealing plots, charts and dashboards

Advanced Visualization

- Creating interactive Visualizations using Bokeh for web-based data representation.
- Leveraging Bokeh's interactive widgets and tools for dynamic Visualizations.
- Building interactive dashboards to present data insights effectively.
- Visualizing process data, quality control metrics and production trends
- Exploring more sophisticated Visualizations for better insights.

Real-world Data Projects

- Applying Data Analysis and Visualization Techniques: Engaging in hands-on projects using real-world datasets.
- Data Storytelling: Communicating data insights effectively through compelling narratives.

Data Ethics and Communication

- Data Ethics: Understanding the importance of data privacy, security, and ethical considerations in Data Analysis.
- Effective Communication: Presenting Data Analysis results in a clear and visually engaging manner.

Final Capstone Project

- Capstone Project: Applying the knowledge acquired throughout the course to complete a comprehensive Data Analysis and Visualization project.
- Portfolio Building: Showcasing your Data Analysis projects to potential employers.

Prerequisites:

- Basic programming knowledge (Python) is recommended but not mandatory.
- Familiarity with data concepts is beneficial.

Why Choose Our Course?

- Comprehensive Curriculum: Our course covers essential Data Analysis and Visualization techniques using Python libraries like NumPy, Pandas, and Bokeh.
- Hands-on Projects: Gain practical experience through real-world projects and case studies.
- Expert Guidance: Receive mentorship from experienced professionals in the field.
- Industry-aligned: The curriculum is designed to meet industry standards and demands.
- Build a Portfolio: Showcase your Data Analysis and Visualization projects to potential employers.