

DATA SCIENCE

ARTIFICIAL INTELLIGENCE
CENTER INDONESIA

Data Science Introduction

1. **What is Data**
2. **What is Data Science**
 - a. Data Science v/s Data Analytics
3. **Understanding AI, ML, Data Science**
4. **Examples and Applications**
 - a. Case Studies
5. **Data Science Project Lifecycle**
 - a. Data Science Project Understanding
 - b. Procedure for handling Data Science Project
6. **What is Machine Learning**
7. **Machine Learning Algorithms**
 - a. Supervised, Unsupervised Learning and Reinforcement Learning Algorithms
 - b. Supervised Learning Algorithms - Regression & Classification
 - c. Unsupervised Learning - Clustering, Dimensionality Reduction, Anomaly Detection,
 - d. Recommendation Systems
8. **Tools and Technologies for Machine Learning Algorithm**
9. **Example of Machine Learning Systems**



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Python for Data Science

1. **Python Programming Overview**
2. **Data Types in Python**
 - a. Integer, string, float, Boolean and complex
 - b. List, tuple, dictionary and sets
3. **Control Flow**
 - a. If else
 - b. For loop
 - c. While loop
4. **Functions in Python**
 - a. Built-in functions
 - b. User defined functions
5. **Statistics for Data**
 - a. Types of Data
 - b. Measure of Central Tendency
 - c. Measure of Spread
 - d. Measure of Shape
 - e. Correlation Analysis
6. **Working with Numpy**
 - a. Numpy arrays
 - b. Generating arrays
 - c. Basic operations
7. **Random Number with Numpy**
 - a. Generating random numbers
 - b. Seeding randomness



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