Boostmysites's
DATA SCIENCE & AI

Module 1: MATHEMATICS

Introduction
Statistics
Calculus
Probability
Linear Algebra

Module 1: PYTHON

1 Basics
- 1.1 Installation
- 1.2 Environment Setting
- 1.3 SDK for Code Execution
- 1.4 Python Pros & Cons
- 1.5 Advantages Of Python

2 Data Types
- 2.1 Mutable and Immutable Categories
- 2.2 Data Type Representation

3 Conditional Statements
- 3.1 if elif and else
- 3.2 while statement

4 Loops and Control Statements
- 4.1 __iter__ and __next__
- 4.2 break and continue statement
- 4.3 enumerate
- 4.4 range
- 4.5 else in for loop

5 Strings
- 5.1 Inbuilt Function Manipulation

6 Lists
- 6.1 Inbuilt Function Manipulation

7 Tuples
- 7.1 Inbuilt Function Manipulation

8 Dictionaries
- 8.1 Inbuilt Function Manipulation

9 Functions
- 9.1 Types of Functions
- 9.2 return statement
- 9.3 Function Scoping
- 9.4 Execution of Nested Function

10 Exception Handling
- 10.1 Types of Exception & Exception base Class
- 10.2 Types of except block
- 10.3 optimized Exception Execution
- 10.4 raise method
- 10.5 “else” and “finally”
- 10.6 user Defined Exception

11 OOP Concepts
- 11.1 Document String
- 11.2 Inheritance and Types
- 11.3 Data Hiding

11.4 Decorators
11.5 Polymorphism
11.6 Method Resolution Order

12 Operators in python

13 SCOPE
13.1 Local Scope
13.2 Enclosing scope
13.3 Global Scope
14 Lambda Functions
14.1 Map function
14.2 Filter function

15 File Operation (txt file)
15.1 Context Manager
15.2 Basic File Operation (read, write, append)
15.3 tell() and seek() method

16 DateTime Manipulation
16.1 import datetime and time
16.2 Change time format
16.3 Adding Hours, minutes and Seconds

Module 3: MACHINE LEARNING

1. Introduction
2. Types of data
3. Raw & Processed data
4. Data Wrangling
5. Packages
5.1 NumPy
5.2 Pandas
5.3 Data Visualization using Matplotlib
5.4 Scikit-Learn
5.5 Data Preprocessing using Pandas

6. Exploratory Data Analysis
7. Linear Regression
    7.1 simple linear regression
    7.2 multiple linear regression
8. Logistic Regression
9. Performance Metrics
10. K Nearest Neighbors
11. Over Fitting & Under Fitting
12. Regularization: Ridge and Lasso
13. Feature Engineering
14. Cross Validation
15. Normalization & Standardization
16. K-Means Clustering
17. Principal Component Analysis (PCA)
18. Decision Trees
19. Support Vector Machine (SVM)
20. Random Forest
21. Hyper Parameter Tuning
22. ADA Boosting
23. Gradient Boosting
24. XG boost
25. Industry based projects and implementation

Module 4: DEEP LEARNING & Computer vision

1. Basics
2. Neural Networks
3. Activation Functions
4. Artificial Neural Networks
5. Cost Functions
6. Optimization
7. Convolution Neural Networks

7.1 CNN
7.2 CNN Architecture
8. Tensorflow
8.1 Tensorflow
8.2 Tensorflow Examples
9. Pytorch
9.1 Pytorch
9.2 Pytorch Examples
10. Keras
10.1 Keras
10.2 Examples
11. Recurrent Neural Networks
11.1 RNN
11.2 RNN Examples
12. Projects

Computer Vision

1 Introduction
2 Open CV
2.1 Open CV
2.2 Open CV Examples
3 YOLO
3.1 YOLO
3.2 YOLO Examples
4 Industry Based Project