Curriculum

- ❖ Python
- ❖ Stats
- ❖ Machine learning
- ❖ Deep learning
- ❖ Computer vision
- ❖ Natural language processing
- ❖ Data Analytics
- ❖ Big data
- ❖ Ml ops
- ❖ Cloud
- ❖ Architecture
- ❖ Domain-wise project
- ❖Databases

Python Basics

1. Python Introduction, Installation, and Setup
2. Python Basics & Conditionals
3. Conditionals & Loops
4. Working with Loops
5. Working with Strings & Lists
6. List manipulation
7. Tuple, Set & Dictionary
8. Working with Functions
9. Functions, Generators & File Handling
10. Logging and debugging
11. Modules and Exception

OOPs

1. OOPs, Classes & Objects
2. OOPS, Abstraction & Inheritance
3. Inheritance, Polymorphism & Intro to Databases

Databases

1. Working with SQL & Python
2. SQL Continued, MongoDB installation & Working with MongoDB
3. Working with Cassandra & Python

Pandas

1. Introduction to Pandas
2. Pandas Basics
3. Pandas Data Manipulation
4. Working with Pandas

Numpy

1. Introduction to Numpy

Matplotlib

1. Working with Pandas & Matplotlib

Plotly

1. Working with Plotly

Seaborn

1. Working with Seaborn

EDA

1. Observation of Datasets

Web Frameworks

1. Rest API, Flask & Working with Postman

2. Working with Flask & Debugging Calculator Application

Python Projects with Deployment

1. Project Discussion Review Scraper with Deployment on Heroku, AWS, and Azure

2. Project Discussion Advance Review Scraper

Statistics

1. Different types of Statistics

2. Population vs Sample

3. Mean, Median, and Mode

4. Variance, Standard Deviation

5. Sample Variance why n-1

6. Variables

7. Random Variables

8. Percentiles & quartiles

9. 5 number summary

10. Histograms

11. Gaussian - Normal distribution

12. Standard Normal distribution

13. Application Of Zscore

14. Basics Of Probability

15. Addition Rule In Probability

16. Multiplication rule in probability

17. Permutation

18. Combination

19. Log Normal Distribution

20. Central Limit theorem

21. Statistics - Left Skewed And Right Skewed Distribution And Relation With Mean, Median And Mode

22. Covariance

23. Pearson And Spearman Rank Correlation

24. What is P Value

25. What is Confidence Intervals

26. How To Perform Hypothesis Testing - Confidence IntervalZ Test Statistics Derive Conclusion

27. Hypothesis testing part 2

28. Hypothesis testing part 3

29. Finalizing statistic

Machine Learning

1. KNN and SVM
2. Decision Tree Practical Implementation
3. Decision Tree Live Coding & Grid Search
4. Grid Search, Bagging Classifier & Random Forest
5. KNN, SVC, SVR & Stacking
6. Clustering
7. Clustering and PCA
8. PCA practical, DBSCAN and Naive Bayes
9. XG Boost, NLTK & TF-IDF

ML Projects

1. Detailed Project Report explanation
2. Project :- Wafer Fault Detection Part 1
3. Project :- Wafer Fault Detection Part 2
4. Deployment in Heroku using docker and circleci
5. ML Project 1 :- Fault detection in wafers based on sensor data
   - The Application Flow
   - Ingestion and Validation Part1
   - Validation Part2
   - DB Operations

- Data Preprocessing
- Clustering
- Model Selection and Tuning
- Prediction
- Deployment

6. ML Project 2 :- Cement Strength Prediction
   - Introduction
   - The Problem Statement and Data Description
   - The Application Flow
   - Code Intro and Logging
   - Validation and Transformation
   - DB Operations
   - Data Preprocessing
   - Clustering
   - Model Selection and Tuning
   - Prediction
   - Deployment
7. ML Project 3 :- Credit Card Defaulters
   - Introduction
   - The Problem Statement and Data Description
   - The Application Flow
   - Code intro and Logging
   - Validation and Transformation

- DB Operations
- Data Preprocessing
- Deployment

8. ML Project 4 :- Forest Cover
   - Introduction
   - The Problem Statement and Data Description
   - Application Flow
   - Code intro and Logging
   - Validation and Transformation
   - DB Operations
   - Data Preprocessing
   - Clustering
   - Model Selection and Tuning
   - Prediction
   - Deployment
9. ML Project 5 :- Income Prediction
   - Introduction
   - The Problem Statement and Data Description
   - Application Flow
   - Code intro and Logging
   - Validation and Transformation
   - DB Operations
   - Data Preprocessing

- Clustering
- Model Selection and Tuning
- Prediction
- Deployment

10. ML Project 6 :- Insurance Fraud Detection
    - Introduction
    - The Problem Statement and Data Description
    - Application Flow
    - Code intro and Logging
    - Validation and Transformation
    - DB Operations
    - Data Preprocessing
    - Clustering
    - Model Selection and Tuning
    - Prediction
    - Deployment
11. ML Project 7 :- Mushroom Classification
    - Introduction
    - The Application Flow
    - Code Intro and Logging
    - Validation and Transformation
    - DB Operations
    - Data Preprocessing

- Clustering
- Model Selection and Tuning
- Predictions
- Deployment

12. ML Project 8 :- Phishing Classifier
    - Database Architecture
    - Introduction to SQL
    - Constraints
    - Joins
    - Import Export
    - Aggregate Functions
    - Order by, Having & Limit Clause
    - String Functions
    - Datetime functions
    - Nested Queries
    - Views
13. ML Project 9 :- Thyroid Detection
    - Introduction
    - The Problem Statement and Data Description
    - The Application Flow
    - Code intro and Logging
    - Validation and Transformation
    - DB Operation

- Data Preprocessing
- Clustering
- Model Selection and Tuning
- Prediction
- Deployment

14. ML Project 10 :- Visibility Climate
    - Introduction
    - The Problem Statement and Data Description
    - The Application Flow
    - Code intro and Logging
    - Validations and Transformation
    - DB Operations
    - Data Preprocessing
    - Clustering
    - Model Selection and Tuning
    - Prediction
    - Deployment