Resources

Problem Statement

1. NumPy: (Updated 13-12-23)
   Practice Assignment Notebook (Important)
   NumPy Theory
   NumPy Documentation
   More Practice for NumPy

2. Pandas: (Updated 13-12-23)
   Pandas Course (Very important)
   Pandas Exercises
   Theory + Questions
   Pandas Aggregation
   Pandas Sorting

3. Matplotlib: (Updated 14-12-23)
   Types of Plots
   Matplotlib Tutorial (Very Important)
   3D Plots
   Matplotlib Exercises (Important)

4. Seaborn: (Updated 15-12-23)
   Seaborn Tutorial (Codes) (Important)
   Seaborn Tutorial (YT)

Quiz 1 (Taken on 15-12-23): Quiz 1: Pandas & NumPy
Make-up Quiz 1 (Taken on 16-12-23): Make-up Quiz 1: Pandas & NumPy

5. EDA: (Updated 16-12-23)
   EDA Guide
   EDA Basic Tutorial (Codes)
   EDA Tutorial (YT)
   EDA (Kaggle)

6. Sklearn: (Updated 16-12-23)
   Sklearn Tutorial (YT)

Uncleaned Datasets for Assignment 1 (EDA Analysis): (Updated 17-12-23)
   Food Habits Dataset (Highly Preferred)
   Laptop Dataset
   Available Jobs Dataset (Used in Mock EDA)
   Bike Sales Dataset

7. Audio Features: (Updated 18-12-23)
   Features of Audio (Very Important)
   More Features of Audio (Very Important)

MFCC (Important)

Quiz 2 (Taken on 19-12-23): Quiz 2: Seaborn, Matplotlib & Sklearn

8. Feature Engineering: (Updated 20-12-23)
   ML for Signal Processing (Videos 1, 2, 3 & 12 for now)
   FE Kaggle Course (VERY important)
   Audio Signal Processing (YT Playlist) (Important)

9. Neural Networks (Updated 26-12-23)
   What are Neural Networks (YT)
   Working of a Neural Network (YT Videos 1 to 7)
   Activation Functions (YT)
   Activation Functions (Blog)

Optional: Machine Learning Algorithms (YT playlist for anyone who is interested in Traditional ML Algorithms – ONLY for additional knowledge; does not have a relation with our project.)

10. PyTorch (Updated 30-12-23)
    Introduction to PyTorch (YT Playlist)

11. Building a Neural Network (Updated 30-12-23)
    Sample Model 1 (Blog)
    Sample Model 2 (YT Playlist – 4 videos – Preferred)

Dataset to be used for the practice model:
UrbanSound8K

Quiz 3 (Taken on 04-01-23): https://forms.gle/b7W7q27qwN6bW5Qc6

12. Batch Normalisation (Updated 08-01-24)
    Batch Normalisation (YT)

13. ResNet (Updated 08-01-24)
    ResNet Model from Scratch (YT)

Re-Quiz 3 (Taken on 9-1-24): https://forms.gle/5b6D6oedbgJJKBEv6

14. Evaluation Metrics (Updated 09-01-24)
    Defining Different Metrics (Blog)
    Implementation of the Metrics (YT)

Quiz 4 (Taken on 11-1-24): https://forms.gle/UxYWPQazvY3E5Rnf8
Re-quiz 4 (Taken on 14-1-24): https://forms.gle/YqDo2z5bHrpaHiJ88