30 Days of Machine Learning |Syllabus

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Part: 1

Day: 1 Introduction & Type of ML
 Link: **https://www.youtube.com/live/8uDZjeXVa_4?si=v7rgw8HAWABjEPFa**

- What is Machine Learning
- How has Machine Learning evolved? The History of ML
- ML vs DL vs AI
- Data Science Vs Data Analytics Vs ML/AI/DL
- Types of machine learning

Day:2 Batch | Model | Instance Based ML
Link: **https://youtu.be/cgmgR7ELjcQ?list=PLxzTa0VPR9rzus4Egb-aOmCWier5XiOba**

- What is Batch / Offline Machine Learning?
- What is Online Machine Learning?
- Difference Between Online Vs Offline Machine Learning?

- Instance Based Machine Learning.
- Model Based Machine Learning.
- Instance Based Vs Model Based Machine Learning.

- Challenges in Machine Learning.
- Application of Machine Learning.
- Machine Learning Development Life Cycle.

Day:3 MLDLC | CSV / JSON / SQL Data Gathering
Link: **https://www.youtube.com/live/zT-gIdeF5Ks?si=Ctpz6673FHpwqnr5**

- Machine Learning Development Life Cycle (MLDLC/MLDC):
- Data science life cycle (DSLC):
- Tools used in Machine Learning? Installing: Anaconda | Jupiter Notebook (IDEs)
- Optional Tools: Spyder | PyCharm | Noteable | Google Colab | Kaggle Notebooks | Microsoft Azure Notebooks | Apache Zeplin | Count.co and Many More
- How to import dataset and download data files?
- How we create virtual environment
- Data Gathering

- Working with CSV Files
- Working with JSON/SQL

Day:4 Framing ML Problem | Fetching Data from an API
Link: https://youtu.be/Kev-JHvEd40?list=PLxzTa0VPR9rzus4Egb-aOmCWier5XiOba

- Framing a Machine Learning Problem

- Data Gathering
    - Fetching data from an API
    - Fetching data using web scraping

Day: 5 Web Scraping for Data Gathering
Link: https://youtu.be/DaGrAC0jTOk?list=PLxzTa0VPR9rzus4Egb-aOmCWier5XiOba

- Fetching data using web scraping

Part: 2

Day: 6 EDA: Type of EDA | Univariate EDA
 Link: https://youtu.be/E0B6IrzBxHM?list=PLxzTa0VPR9rzus4Egb-aOmCWier5XiOba

- Types of Exploratory Data Analysis:
- Univariate Analysis
- Bivariate Analysis
- Multivariate Analysis
- How We Understand the Data?

Day: 7 EDA: Bivariate | Multivariate
Link: https://youtu.be/pqqt3BXdVFo?list=PLxzTa0VPR9rzus4Egb-aOmCWier5XiOba

- EDA Bivariate Analysis
- EDA Multivariate Analysis

Day: 8 Panda Profiling | Type of Feature Engineering
Link: https://www.youtube.com/live/JArbcZpvWuQ?si=lPVb9hhcD19RDuQ9

- How do we use the pandas profiling tool?
- Feature Engineering

- Feature Transformation
- Feature Construction
- Feature Selection
- Feature Selection

Day: 9 Categorical Variables | One Hot Encoding | Ordinal & Label Encoading
Link : https://youtu.be/aG6rEJvQkEc?list=PLxzTa0VPR9rzus4Egb-aOmCWier5XiOba

- **How to Encode "Categorical Variables"?**
- What is categorical data?
- **Type of categorical data?**
- What is Ordinal Data?
- Ordinal Encoding
- Label Encoding
- What is Nominal Data?
- One Hot Encoding

Day: 10 Handling Missing Data | Missing completely at random (MCAR) | Complete Case Analysis (CCA)

- Handling Missing Data
- What are the problems with missing data?
- Remove Missing Values
- What is a missing completely at random (MCAR)?
- Pro and Corns Complete Case Analysis (CCA)?
- When we use CCA?

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