

# MLDL

## Instructors:

### krish naik:

Having 10+ years of experience in Data Science and Analytics with product architecture design and delivery. Worked in various product and service based Company. Having an experience of 5+ years in educating people and helping them to make a career transition.

### Sudhanshu Kumar:

Having 8+ years of experience in Big data, Data Science and Analytics with product architecture design and delivery. Worked in various product and service based Company. Having an experience of 5+ years in educating people and helping them to make a career transition.

## Curriculum:

### Course Introduction

- Introduction of Data science and its application in Day to Day life
- Course overview and Dashboard description

### Python Core

- Introduction of python and comparison with other
- Programming language
- Installation of Anaconda Distribution and other python
- IDE Python Objects, Number & Booleans, Strings
- Container objects, Mutability of objects

- Operators Arithmetic, Bitwise, Comparison and Assignment operators, Operators Precedence and associativity
- Conditions(If else,if elif else) Loops(While ,for)
- Break and Continue statement and Range Function.

### **String Objects and collections**

- String object basics
- String methods
- Splitting and Joining Strings
- String format functions
- List object basics
- List as stack and Queues
- List comprehensions

### **Tuples, Set, Dictionaries & Functions**

- Tuples,Sets Dictionary Object basics, Dictionary Object methods, Dictionary View Objects.
- Functions basics, Parameter passing, Iterators Generator functions
- Lambda functions
- Map , Reduce, Filter functions

### **OOPS Concepts & Working With Files**

- OOPS basic concepts
- Creating classes and Objects Inheritance
- Multiple Inheritance
- Working with files
- Reading and writing files

- Buffered read and write
- Other File methods

## **Exception Handling**

- Exceptions Handling with Try except

## **API**

- Flask introduction
- Flask Application
- Open linkFlask
- App RoutingFlask
- URL BuildingFlask
- HTTP MethodsFlask

## **Database**

- Mongo DB SQL
- Lite python SQL

## **Python pandas Modules**

- Python Pandas Series
- Python Pandas DataFrame
- Python Pandas Panel
- Python Pandas Basic functionality

## **Python Numpy**

- NumPy Ndarray Object

- NumPy Data Types
- NumPy Array Attributes
- NumPy Array Creation Routines
- NumPy Array from Existing
- Data Array From Numerical Ranges
- NumPy Indexing & Slicing
- NumPy Advanced Indexing
- NumPy Broadcasting
- NumPy Iterating Over Array
- NumPy Array Manipulation
- NumPy Binary Operators
- NumPy String Functions
- NumPy Mathematical Functions
- NumPy Arithmetic Operations
- NumPy Statistical Functions
- Sort , Search & Counting Functions
- NumPy Byte Swapping
- NumPy Copies Views
- NumPy Matrix Library
- NumPy Linear Algebra

### **Exploratory Data Analysis**

- Feature Engineering and Selection
- Building Tuning and Deploying Models
- Analyzing Bike Sharing Trends

- Analyzing Movie Reviews Sentiment
- Customer Segmentation and Effective Cross Selling
- Analyzing Wine Types and Quality
- Analyzing Music Trends and Recommendations
- Forecasting Stock and Commodity Prices

## **Statistics**

- Descriptive Statistics
- Sample vs Population statistics Random Variables
- Probability distribution function Expected value
- Binomial Distribution
- Normal Distribution z score
- Central limit Theorem
- Hypothesis testing Z Stats vs T stats
- Type 1 type 2 error
- Confidence interval
- Chi Square test
- ANOVA test
- F stats

## **Machine Learning 1**

- Introduction
- Supervised , Unsupervised, Semi supervised, Reinforcement Train , Test, Validation Split
- Performance Overfitting , underfitting OLS.
- Linear Regression assumption.

- R square adjusted
- R square Intro to Scikit learn
- Training methodology
- Hands on linear regression
- Ridge Regression
- Logistics regression
- Precision Recall ROC curve
- F Score

## **Machine Learning 2**

- Decision Tree Cross
- Validation Bias vs Variance
- Ensemble approach Bagging
- Boosting Random
- Forest Variable Importance

## **Machine Learning 3**

- XGBoost
- Hands on XgBoost
- K Nearest Neighbour
- Lazy learners
- Curse of Dimensionality
- K NN Issues
- Hierarchical clustering K Means
- Performance measurement

- Principal Component analysis
- Dimensionality reduction
- Factor Analysis

## **Machine Learning 4**

- SVR
- S V M
- Polynomial Regression
- Ada boost
- Gradient boost
- Gaussian mixture
- Anamoly detection
- Novelty detection algorithm Stacking
- K NN regressor
- Decisson tree regressor DBSCAN

## **Natural Language Processing**

- Text Ananlytics
- Tokenizing , Chunking
- Document term
- Matrix TFIDF
- Sentiment analysis hands on

## **Spark**

- Spark overview.

- Spark installation.
- Spark RDD.
- Spark dataframe .
- Spark Architecture.
- Spark ML lib.
- Spark Nlp
- Spark linear regression.
- Spark logistic regression.
- Spark Decision Tree.
- Spark Naive Bayes
- Spark xg boost
- Spark time series.
- Spark Deployment in local server
- Spark job automation with scheduler.

## **Deep Learning**

- Deep Learning Introduction.
- Neural Network Architecture.
- Loss Function.
- Cost Function.
- Optimizers.
- CNN architecture.
- Build First Classifier in CNN.
- Deploy Classifier over cloud.
- RNN overview.



- GRU.
- LSTM.
- Time Series using RNN LSTM.
- Customer Feedback analysis using RNN LSTM.

### **Time series**

- Arima
- Sarima .
- Auto Arima
- Time series using RNN LSTM .
- Prediction of NIFTY stock price.

### **Deployment**

- Deployment of all the project In cloudfoundary , AWS AZURE and Google cloud platform
- Expose api to web browser and mobile application retraining a pproach of Machine learning model
- Devops infrastructure for machine learning model
- Data base integration and scheduling of machine learning model and retraining c ustom machine learning training approach.
- AUTO ML
- Discussion on infra cost and data volume
- P rediction based on streaming data

### **Extra session**

- Discussion on project explanation in interview
- Data scientist roles and responsibilities

- Data scientist day to day work
- Companies which hire a data scientist
- Resume discussion with our team one to one

### **Tableau and PowerBI self Paced Session**

- Business Intelligence (BI) Concepts.
- Microsoft Power BI (MSPBI) introduction.
- Connecting Power BI with Different Data sources.
- Power Query for Data Transformation.
- Data Modelling in Power BI.
- Reports in Power BI Reports and Visualisation types in Power BI.
- Dashboards in Power BI.
- Data Refresh in Power BI.
- Traditional Visualisation(Excel) vs Tableau.
- About Tableau.
- Tableau vs Other BI Tool Pricing.

### **Tableau Interview Question**

### **Python projects**

- Web crawlers for image data sentiment analysis and product review sentiment analysis
- Integration with web portal
- Integration with rest API with Web portal and Mongo DB on Azure
- Deployment on web portal on Azure
- Text mining

- Social media data churn

### **Chatbot Projects**

- Chatbot using Microsoft Luis
- Chatbot using google Dialog flow
- Chatbot using Amazon Lex
- Chatbot using Rasa NLU
- Deployment of chatbot with web , Telegram , Whatsapp , Skype

### **Machine Learning Projects**

- Healthcare analytics prediction of medicines based on FIT BITband
- Revenue forecasting for startups
- Prediction of order cancellation at the time of ordering inventories.
- Anomaly detection in inventory packaged material.
- Fault detection in wafers based on sensor data
- Demand forecasting for FMCG product.
- Threat identification in security system.
- Defect detection in vehicle engine.
- Food price forecasting with Zomato dataset.
- Fault detection in wafers based on sensor data.
- Cement\_Strength \_ reg.
- Credit Card Fraud.
- Forest\_Cover\_Classification .
- Fraud Detection.
- Income Prediction.

- Mushroom classifier., Phising Classifier , Thyroid\_Detection .
- Visibility climate.

### **Deep Learning projects**

- Customer Feedback analysis using RNN LSTM.
- Family member detection.
- Industry financial growth prediction.
- Speech recognition based attendance system.
- Vehicle Number plate detection and recognition system.

### **Tableau and PowerBI Projects**

- Project 1. Project Sales.
- Project 2. Financial Report.
- Project 3. HealthCare.
- Project 4. Procurement Spend Analysis.
- Project 5. Human Resource Tableau