Week-3-Machine-Learning-Regression

1) Problem Identification in AI2) How to identify Supervised Learning

3) How to identify Unsupervised Learning

4) Difference Btw Super and Unsuper-Scenario Based

5) How to identify Semi Supervised

6) How to identify Supervised-Classification and Regression

7) Mapping Domains with Learning

8) Scenario based Example to identify problem-1

9) Scenario based Example to identify problem-1-Dataset

10) Scenario based Example to identify problem-2

11) Problem Identification Assignments

Problem Identification Assignments

12) Recall13) Two Phases of Artificial Intelligence

14) Model Creation Learning Phase-1

15) Deployment-Phase-2

16) Algorithms

17) Simple Linear Regression

18) SLR-Requirement and Problem Identification

19) Model Creation-Learning -Phase-SLR

20) Evaluation Metrics SSE,SSR,SST

21) R_Squared and AdjustedR_Square

22) The Purpose of Training and Test set

23) ML in HR Domain -Problem Identification

24) Mapping the code with Phases

25) Hands-on-SLR

26) Hands-on-Model Creation Learning phase-1

27) Hands-on-How to save model

28)Hands on deployment Phase

29) How to do Assignment-Baby Step-2

30) Recall

31) Multiple Linear Regression

32) PS Ai in Business Intelligence

33) Nominal and Ordinal

34) Hands-on-MLR-1

35) Hands-on-MLR-2

36) SVM

37) Standard

38) ML-Secret

39) Hands-on-SVM

40) Decision Tree

41) Hands-On Decision Tree

42) Random Forest

43)Hands-on-RF

44) Assignments-Regression-Baby Step-3

45) Regression Assignment

46) Boosting Algorithm

47) How to install Library

48) Cross Validation

49) GridSearchCV

50) Hands-on GridsearchCV

51) How to select model using GridsearchCV

Week-4.1-Machine-Learning-Classification0 / 19

1) Intro to Classification

2) Hands-on walkthrough

3) Confusion Matrix-1 4) Confusion Matrix 5) Hands-on-RF 6) Hands-on-DT7) Hands-on-SVM 8) Logistic Regression 9) Hands-on-Log 10) KNN 11) KNN-hands-On 12) Navie bayes 13)Hands-on NB 14) All Algorthims- Must Watch 15) Grid-Log-Hands-on 16) Grid SVM-DT-RF 17) Assignment Classification

Week-4.2-Machine-Learning-Clustering0 / 12

1) Virtual Environment

2) Virtual-Hands-on

3) K-Means Clustering

4) KMeans-Hands-on-1

5) KMeans-Hands-on-2

6) K-Means-Code-Explainnation

7) Agglomerative

8) Assignment-Clustering

9) All Clustering Explanations

Week-4.3-Important Practice-Coding and Error Handling0 / 4

1. Code Flow

2. Secret Hack to write Optimized Code

3.Syntax Error

Add-on-1:Self Branding: LinkedIn0 / 12

1. Self Branding -LinkedIn

2. Self Branding LinkedIn

Important Groups to follow

4.How to prepare the content for self branding

4.1How to write caption and 3-color

4.2 Type of post and Video Content

5. How to add python Notebook

6.How to edit canva post

7.How to post in Liknedin and Groups

Linkedin Group PDF

PDF

Social Media linkedin

PDF

8.Github Dashboard

Week-5-Data Science-Univariate Analysis3 / 33

1) Intro to Data-Science

2) Types of Analysis

3) Types of Column

4) Quan and Qual-1

5) Quan and Qual-2

6) Concepts under Univariate

7) Measure of Central Tendency

8) MCT-hands-on-1

9) Hands-on-MCT-2

10) Percentile

11) Percentile-Hands-on

12) IQR

13) Hands-on-IQR

14) Finding-Outliers column

15) Replacing Outliers

16) Frequency

17) Hands-on Frequency

18) LinkedIn Post

19) Histogram, Skewness, Kurtosis

20) Hands-on HSK

21) Data-Preprocessing-Hands-on

22) Data-Preprocessing-update

23) Variance and Std variance

24) Hands-on Std and Variance

25) Normal Distribution

26) Probability Density Function

27) Hands-on-PDF-CDF

28) Hands-on-CDF

29) Standard Normal Distribution

30) Hands-on-SND

31) Z-Score

32) Z-Score Application

MCQ- DS (Univariate)

Online Exercise

Week-6-Data Science-Bivariate Analysis0 / 16

1) Co-Variance and Correlation

2) Hands-on-Covariance and Correlation

3) Assignment Solution

4) Multicolinearity

5) Hands-on-VIF

6) Hemo and Hetro

7) T-Test

8) Hands-on-T-Test

9) Hypothesis Testing

10) Hypothesis Hands-on

11) ANAVO

12) Hands-on ANAVO

13) Assignment-Data Analysis

14) Assignment Question PDF

PDF

Question Bank-Data Science

External Link

MCQ- DS (Bivariate)

Online Exercise

Week-7-Data Visualization-Seaborn-Tableau-Data Studio0 / 12

1) Seaborn-1

2) Seaborn-2

3) Data Studio-1

4) Data Studio-2

5) Data Studio-3

6) Tableau-1

7) Tableau-2

8) Tableau-3

9) Zomato Dataset

Assignment Zomato Dataset

PDF

MCQ- Data Visualization

Online Exercise

Set Question Data Science

Compressed File

Week-8.1:Advanced ML-Feature Selection0 / 7

1) Feature Selection and Dimension Reduction

2) Select k Algorithm

3) Hands-on Select K algorithm

4) RFE

5) Hands-on-RFE

6) Advanced ML flow

MCQ- Advanced ML (Feature Selection)

Online Exercise

Week-8.2:Advanced ML-Dimensionality Reduction0 / 6

1) Scalar and Vector

2) PCA

3) Hands-on PCA

4) Hands-on LDA

Question Bank- Machine Learning

External Link

MCQ- Advanced ML (Dimensionality Reduction)

Online Exercise

Advanced Techniques0 / 9

1) Fit

2) Fit_Transform

3) Transform

4) Over fitting

5) Under fitting

6) Best fitting

7)Twocases

8)Hands-on-To handle preprocessed input deployment phase

9)Hands-on- Preprocessed input and output

Week-9.1: Machine Learning and Data Science Capstone Project0 / 3

1) Assignment Instruction

MCQ- ML & DS Capstone Project

Online Exercise

2) How to collect dataset for Machine Learning?

Youtube

Week-9.2-Web Development-Shortcut Way0 / 6

1) Web Development-1

2) Web Development-2

3) Web Development-3

4) Web Develop-4

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Week-9.3-Web Development Detailed Way0 / 17

Intro to Web Development

2) Web Development Demo

3) Create project and App

4) Setup Must watch

5) Settings

6) Forms

7) Models

8) Input Html page

9) Views-1

10) Get and Post

11) Backend View

12) Processed Output

13) Output page

14) APP urls

15) Project URL

16) Data base comment

17) Classification Walkthrough

Week-10: Recommendation System0 / 11

1) User based- Intuition

2) User Based-1-Hands-On

3) User-Based-2-Hands-On

4) Item based Recommendation System

5) Hands-on Item based

6) Content Based Recommendation

7) Hands-on CBR-1

8) Hands-on CBR-2

9) Popularity based

Set Questions - AdvancedML

Compressed File

Week-10.1-MySQL0 / 21

1) What is SQL and Why?

2) Installation Process for MySQL-Workbench

3) Difference between Database and Tables

4) SQL Commands Segregation

5) How to Create Database and Table in mySql

6) Creating Table

7) Data Definition Lanaguage-1

8) Primary Key vs Foreign Keys

9) Data Manipulation Language-1-Insert, Update

10. Transaction Control Language- Transaction, Savepoint, Rollback, Commit

11) Data Query Language and Data Retrieval Language

12) DQL-DRL-2

13) Joins Purpose

14) Join-Inner, Left, Right

15) Join- Natural Joins

16) Join- hands on

17) Data Control Language- Grant, Revoke

18) How to do Assignments-Amazon-Netflix

Set Question MySql

Compressed File

Week-11: Deep Learning Module0 / 46

1) How Deep Learning differs from Machine Learning

2) How Human Brain works-Neural Network

3) How Computer Understands Image

4) ANN-1

5) ANN-2

6) ANN-3

7) ANN Visual Video from 3 Blue 1 Brown

8) Gradient descent, how neural networks learn | Chapter 2, Deep learning

9) What is backpropagation really doing? | Chapter 3, Deep learning

10) Backpropagation calculus | Chapter 4, Deep learning

11) Hands-on-ANN-1

21) CNN-1

26) CNN-6-Hands-on

27) CNN-7-Hands-on

28) How to explore more codes

29) Pre-Trained Model

30) Transfer Learning

31) Transfer Learning Matrix

32) Deep Learning flow

Librarypdate

33) Face Mask Detection-1

34) Face Mask Detection-2

35) Face Mask Detection-3

36) FaceMaks_Detection-4

37) FaceMask_Detection-5 & Assignment at end(Must Do)

38) How to do AI Application using Pre Trained Models

39) Deep Learning Assignment Must Do

Question Bank- Deep Learning

External Link

40) How to collect dataset for Deep Learning?

Set Questions Deep Learning

External Link

Set Question Times Series

Compressed File

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Week 12: Time Series Analysis0 / 26

1) Intro to Time Series

2) Share Market basic

3) Time Series is a Regression

4) Time series vs ML Regression

5) Components in Time Series

6) Assumption in Time Series

7) How to overcome Non-Stationarity Series

8) EDA-Stock Data

9) Stationarity Check Hypothesis

10) Auto Correlation in Time Series

11) Partial Auto Correlation

12) Auto Regression-1

13) Auto Regression-2

14) Training Set and Test Set Split

15) Model Creation and Forecasting

16) User Defined Function

17) Moving Average

18) Moving Average-Hands-On

19) ARMA,ARIMA

20) Hands-On MA

21) Hands-on Sarimax

22) VAR

23) Hands-on VAR

Question Bank Time series

Week-13:Natural Language Processing0 / 15

1) Types of Process in NLP

2) How Computer Understands Text

3) Problem Statement

4) Hands-on-1

5) Hands-on-2

6) IT-IDT Vector

7) WhatsApp chat Pre-Processing

8) WhatsApp Chat

9) Sentimental Analysis

10) Topic Modelling

11) Word Cloud

12) WhatsApp Demo and Assignment

NLP Assignment

PDF

Question bank- NLP

External Link

MCQ- NLP

Online Exercise

Week-13:1-NLP+ Deep Learning(Generative AI)0 / 23

1. Introduction to NLP+DL

2. What is the need of Word Embedding

3. Word2Vec Continuous Bag of Words

4. Word2Vec Skip Gram

5. Hands-on Word Embedding

6. Introduction to RNN

7. Why RNN is a Failure Model

8. Sigmoid Tanh

9. LSTM1

10. LSTM2

11. Seq 2 Seq

12. Hands-on LSTM Seq2Seq

13. Transformer Introduction

14. Transformer Input Embedding

15. Positional Encoding

16. Single Head Query Key Value

17. Single Head Attention Filter

18. Multi Head Attention

19. Residual Connection

20. Decoder Output Module

Question Bank- NLP

External Link

Week-14: ChatGPT API - Advanced Techniques(Generative AI)0 / 21

0) What is API?

1.ChatGpt API Introduction

2. Open ai API and Level-1 Code

3.Chatbot model customized Chatgpt

4. Create end user ChatGPT with sharable Link

5.Buliding Systems with ChatGpt API-Introduction

6. BSWC Problem Statement

7.BSWC- Classify the inputs

8. BSWC-Moderation

9. BSWC- Chaining Prompting

10.BSWC-Chain promting-2

11. BSWC - Chainpromting Continuation

12- BSWC- Check Outputs

13.BSWC- End to End System

14.BSWC- Evaluate-1

15.BSWC- Evaluate2

16. Using Gemini and Ollama

17.Ollama Installation

18. How to Generate Gemini API

Week-15: Real Time Application with ChatGpt API(Generative AI)0 / 13

1) Real Time Implementation Website Demo

2)Overview flow of Realtime Application

3) Website - AI Chatbot -Step-1

4) Website - AI Chatbot -Step-2

5) Website - AI Chatbot -Step-3

6) Website - AI Chatbot -Step-4

7) Website - AI Chatbot -Step-5

7.1) How to give open API Key in Replit

8) Website - AI Chatbot -Step-6

9) Website - AI Chatbot -Step-7

10) Website - AI Chatbot -Step-8

Question Bank- LLM

External Link

MCQ- GenAI Realtime application

Online Exercise

Week-16-RAG(Retrieval Augmented Generative))0 / 5

1.Why RAG?

2.Working Principle of RAG

3.Hands_on_with_Langchain_ChromaDB_Gemini

Week-17: Deployment on Google cloud platform0 / 20

1.Deployment Introduction

2. Download Editor Notepad

3. Deployment Cloud Platforms

4. Deployment Cloud Procedures

5. Running Flask ML application on local host

6. Preparing Environment file

7. Deployment on GCP App Engine Serverless Procedure

8. Docker file Introduction

9. Deployment Procedure Docker Localhost

10. Deployment Procedure DockerLocalHost2

11.Deployment Procedure Docker LocalHost 3

12. Deployment GCP Through Docker Procedure

13. Deployment on GCP Through Kubernetes

14) CI/CD - Introduction

15) Git-DOwnload-CI/CD

16) GCPCloudBuild-CI/CD

17) How CI/CD making changes to the Deployment world

18) Yaml-Explanation-CI/CD

19) Overall flow of CICD procedure

Week-18: AI Agents - AutoGen7 / 21

1.Introduction to AI Agents

2. AI Agents Types

3. Why AI Agents?

4.LLM Models we Use

5. Two Agent Code Walk Through

6. Two Agent Code Detailed Explanation

7. Two Agents with AgentOps

8.Two Agent using Gemini

9. Ollama Local Models

10.How to use OllamaModel

11.Two Agents Retrieve User Proxy

12. Two Agent Retrieve Gemini Ollama

13. Auto gen DOcumentation Overview

14. Multi Agents - Sequential Chat with Options

15. Sequential Chat Agent Problem Statement

16. Sequential Chat handson with Call to Action

17. Multi Agent Nested Agents Problem Statement

18.Nested Chat Hands-On

Week-19- AWS Sagemaker AI0 / 43

1.What is AWS

2.What are the service under AWS

3.How to create AWS Account

4.Login Process in AWS- Root User

5.How to create S3 Bucket

6.AWS Sagemaker AI Domain Intro

7. How to create Domain in AWS Sagemaker AI

8.How to push file from Sagemaker to s3 bucket -1-Hands -on

9.How to push file from sagemaker to s3 bucket 2-hands-on

10.Road Map for next goal

11.Types of Training Jobs in AWS Sagemaker

12. Script Mode

13. Training Model Via Script Model

14.Deploy and Create Server Based Endpoint

15.Predict Via Server Based Endpoint in AWS

16.Install VS Code

17.Prediction Via Server Based End Point out of AWS

18.How to Create IAM user

19.How to Create Serverless endpoint

20.How to use serverless endpoint out of AWS

7.1 Must Watch How to stop running instance

21. How to Delete Domain

22.Purpose of EC2 Instance and 6 combination of deployment

23.How to create EC2 Instance

24.Deploying Local model on EC2 Instance

25.Overview Of S3 Model Deployment

26. S3 Model (Hardcoded)-Insurance

27. S3 Model with Secret Key

28 S3 Model Github EC2 Hosting

29.Overview of Deploying RAG Chatbot in AWS

30.AWS Deployment Flow Architecture

31.What is Lambda Functions in AWS?

32. Replit code to AWS Lambda Functions

33.Lambda Function RAG Code Explanation

34.Creating Folder for RAG

35.How to configure AWS CLI

36. How to create DockerFile

37.How to create Docker Image

38. Create API Gateway Invoke URL

39. Deploy Invoked URL in Frontend

40.CICD GitHub Actions

41. YML Code Explanation

42. CICD Deployment

Week-20- LangChain- AI Agent Framework0 / 24

1) What is the purpose of Langchain?

2. Langchain and its Eco System

3.Langchain version

Langchain-LLM-Models

5) Langchain HandsOn LLM Prompt Template

6.Langchain Wrap Tools Hands On

7) LangChain Multiple Tool HandsOn

8. Multiple Tool Web Search Hands on

9) InitializeAgent Hands on

10) Langchain Initailize Model Multiple Tools

11) AgentTypes in Langchain

12) AgentTypes- first 3 types- hands-on

13) Agent Types-last 4 types- Hands-on

14Memory Types Overview

15) First types of memory in Langchain

16) last 4 types of memory in langchain

17) LangChain Rag as Tool

18) LangChain Types of Rag Overview

19) LangChain Types of RAG-1 - HandsOn

20) LangChain Types of RAG-2 - HandsOn

21) LangChain Types of Rag-3- Hands on

22) Types of Chains in Langchains

23. Types of OutputParser

I need a favor from you

Week 21- LangGraph -AI Agent Framework0 / 9

1)LangGraph- Introduction

2) LangGraph Node and Edges -Hands On

3) LangGraph Code Explanation

4) LangGraph SImple Flow Execution Hands-On

5) LangGraph Conditional Edges

6)LangGraph Double Conditional Loop

7) LangGraph Loop

8) LangGraph- One Skip loop

9) LangGrpah- Assignment

Week-22-MCP0 / 7

1. Introduction to MCP

2. Claude Filestorage access -hands0n

Youtube

3. AI Agent vs Agentic AI vs Rag Vs MCp

4.Async-Hands-On

5.Async Hands On-2

6. MCP-Sqlite- Demo

7.MCP SQlite-HandsOn