|  |  |
| --- | --- |
| **SESSION** | **AUG-SEP’23** |
| **PROGRAM** | **MASTER OF BUSINESS ADMINISTRATION (MBA)** |
| **SEMESTER** | **IV** |
| **course CODE & NAME** | **DADS401- Advanced machine learning** |
| **CREDITS** | **04** |

**Assignment Set – 1st**

**Questions**

**1. a. Explain the elements of Time Series Model?**

**Ans:**A time series model is a statistical model that is used to analyze and make predictions about time-ordered data points. Time series data consists of observations or measurements taken sequentially over time, and the goal of a time series model is to capture the underlying patterns, trends, and seasonality in the data.

**Here are the key elements of a time series model:**

**Time Index:**

The time index represents the Its Half solved only

Buy Complete from our online store

<https://smuassignment.in/online-store/>

MUJ Fully solved assignment available for**session SEPT 2023.**

Lowest price guarantee with quality.

Charges**INR 198 only per assignment.**For more information you can get via mail or Whats app also

Mail id is aapkieducation@gmail.com

Our website www.smuassignment.in

After mail, we will reply you instant or maximum

1 hour.

Otherwise you can also contact on our

whatsapp no 8791490301.

**b. Explain the merits and demerits of using Smoothing?**

**Ans:**Smoothing techniques are commonly used in time series analysis to reduce noise and reveal underlying patterns in the data.

However, like any statistical method, smoothing has its merits and demerits.

**Let's explore the advantages and disadvantages of using smoothing:**

**Merits (Advantages)**

**2. a. Discuss time series using ARIMA model.**

**Ans: ARIMA,** which stands for Autoregressive Integrated Moving Average, is a popular and widely used time series forecasting model. It is effective for capturing and predicting temporal patterns in data, especially when the series exhibits a clear trend and/or seasonality.

**The ARIMA model is comprised of three main components:**

Autoregressive (AR),

**b. Define ARCH Model? Discuss its Usage.**

**Ans: ARCH,** which stands for Autoregressive Conditional Heteroskedasticity, is a statistical model used in time series analysis to capture changing levels of volatility over time. It was introduced by Robert Engle in 1982 and has since become a fundamental tool in financial econometrics for modelling the volatility of financial returns. The ARCH model is

**3. a. Explain few risks associated with Artificial Intelligence.**

**Ans: Artificial Intelligence (AI)** presents numerous opportunities and benefits across various industries, but it also comes with its share of risks and challenges. As AI systems become more sophisticated and integrated into different aspects of society, it's important to be aware of potential risks.

**Here are some**

**b. Explain any three applications of AI in Medical sciences.**

**Ans: Artificial Intelligence (AI)** is making significant strides in the field of medical sciences, offering innovative solutions to improve patient care, diagnostics, and overall healthcare outcomes.

**Here are three applications of AI in medical sciences:**

**Diagnostic Imaging:**

**Application:**

**Assignment Set – 2nd**

**Questions**

**1. (A) Explain the process of Deep Learning?**

**Ans:**

Deep learning is a subset of machine learning that involves the training of artificial neural networks to perform tasks without explicit programming.

**The process of deep learning typically involves several key steps:**

**Define the Problem and Collect Data:** Clearly define the problem you want the deep learning model to solve. Determine the type of data needed for training, validation, and testing. Collect

**(b) Describe some applications of ANN?**

**Ans:**Artificial Neural Networks (ANNs) have found applications across various domains due to their ability to learn complex patterns and make predictions or decisions from data.

**Here are some notable applications of Artificial Neural Networks:**

**Image and Speech**

**2. a. Differentiate CNN vs. RNN.**

**Ans: Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs)** are both types of neural networks commonly used in deep learning, but they are designed for different types of data and tasks.

**Here are the key differences between CNNs and RNNs:**

**1.**

**b. Explain the classification of Layers of CNN.**

**Ans: Convolutional Neural Networks (CNNs)** consist of different types of layers that work together to process and analyze visual data efficiently. The typical layers in a CNN can be classified into several categories, each serving a specific purpose in feature extraction and classification.

**Here is a**

**3. A. What is Auto-Encoder? Explain its classification?**

**Ans:**An autoencoder is a type of artificial neural network that is trained to learn efficient representations of data, typically for the purpose of dimensionality reduction or feature learning. The key idea behind an autoencoder is to encode the input data into a lower-dimensional

**b. State the difference between SARSA and Q-Learning?**

**Ans:**SARSA (State-Action-Reward-State-Action) and Q-Learning are both reinforcement learning algorithms used for training agents in environments to make decisions that maximize cumulative rewards.

**However, there are key differences between the two:**

**Update Rule:**

**SARSA:**