

Q1. Differentiate between logical, geometric and probabilistic learning models with suitable examples.

Q2. What is dimensionality reduction? How can Principal Component Analysis (PCA) be used for dimensionality reduction? Elaborate the steps in PCA with example. Enlist the applications of PCA.

Q3. What is Feature Preprocessing?

What is dimensionality reduction, and why is it important?

Q4. What is feature selection? Discuss various feature selection techniques in brief.

Q5. Difference between Normalization and Standardization

Q6. Differentiate between feature selection and feature extraction.

Q7. Find Eigenvalues (λ) and Find Eigenvectors

$$A = \begin{bmatrix} 2 & 1 \\ 1 & 2 \end{bmatrix}$$

Q8. List and briefly explain the three main types of missing data

Q.9 Explain the difference between covariance and correlation in PCA.

Q.10 What is the purpose of statistical feature engineering, and give two examples of statistical features.