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Assignment 1

Apply Apriori Algorithm for the following transactions and evaluate confidence. Tid List of Item IDs T100 I1, I2, I5 T200 I2, I4 T300 I2, I3 T400 I1, I2, I4 T500 I1, I3 T600 I2, I3 T700 I1, I3 T800 I1, I2, I3, I5 T900 I1, I2,I3. (Use Assignment answer sheet or, use unit 1 ppt 132-142)

Assignment 2

Comment on Back Propagation technique. (Use DL notes or write on your own)

Or

Illustrate Multilayer perceptron with an appropriate detail. (Use DL notes or use unit 4 multilayer perceptron ppt)

CAE 1

Discuss about PAC Learning. Highlight the tradeoff between Bias and Variarnce (UNIT 1 164-187)

Find linear regression equation for the following two sets of data: a) Plot the data. Do X and Y seem to have linear relationship? b) Predict the Y value when X=15 X 2 4 6 8 Y 3 8 5 10. (Use your answer sheet)

Criticize “PCA is good for dimensionality reduction”.(UNIT 1 164-187)

Predict whether will buy computer or not using Naïve Bayes Classification for the given Dataset and X = {age = youth, Income = Medium, Student = yes, Creditrate = Fair} (UNIT 2 46-47)

CAE 2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Compose the decision tree using Decision Tree Induction.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Owns Home | Married | Gender | Employed | Class | | Yes | Yes | Male | Yes | B | | No | No | Female | Yes | A | | Yes | Yes | Female | Yes | C | | Yes | No | Male | No | B | | No | Yes | Female | Yes | C | | No | No | Female | Yes | A | | No | No | Male | No | B | | Yes | No | Female | Yes | A | | No | Yes | Female | Yes | C | | Yes | Yes | Female | Yes | C | |

Evaluate the clusters using the Single linkage Hierarchical Clustering for the distance matrix and draw its Dendogram. ( UNIT 3 **Hierarchical Clustering (PPT)** 18-31, 33-34, 35)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **A** | **B** | **C** | **D** | **E** | **F** |
| **A** | 0 |  |  |  |  |  |
| **B** | 0.71 | 0 |  |  |  |  |
| **C** | 5.66 | 4.95 | 0 |  |  |  |
| **D** | 3.61 | 2.92 | 2.24 | 0 |  |  |
| **E** | 4.24 | 3.54 | 1.41 | 1.00 | 0 |  |
| **F** | 3.20 | 2.50 | 2.50 | 0.50 | 1.12 | 0 |

Construct a Single Layer perceptron and explain it with an example. (**Neural Network (PPT)** UNIT 4 29-33)

Solve using Back propagation neural network algorithm. Given (**Multilayer-Perceptron (PPT)** 11-15)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Solve using Back propagation neural network algorithm. Given:   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | X1 | X2 | X3 | | W14 | W15 | | W24 | | W25 | W34 | | W35 | W46 | | 1 | 0 | 1 | | 0.2 | - 0.3 | | 0.4 | | 0.1 | - 0.5 | | 0.2 | - 0.3 | | W56 | | | Ɵ4 | | | Ɵ5 | | Ɵ6 | | | | - 0.2 | | | - 0.4 | | | 0.2 | | 0.1 | | |   Learning rate = 0.9, Class label (Target Tj) = 1. |

