Exam. Code: 0925 Sub. Code: 6547

2063 B.E. (Information Technology) Seventh Semester IT-702: Machine Learning

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt <u>five</u> questions in all, including Question No. I which is compulsory and selecting two questions from each Part.

x-x-x

| (a) How | machine learni | ng is different fro | m deen learning? | | (10) |
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| ` ' | | | | ity? | |
| (e) What | is the differen | | | | |
| () D. | tion for | | | aularization using | (5) |
| | | | | igulalization using . | (3) |
| | | | | (5) | |
| | | | | | (5) |
| | | | | | (5) |
| reviews, 255 | | | | | |
| | e importance o | of theta/weight/pa | rameter in linear clas | sification? Explain | (5) |
| | | | | 게임하는 그렇게 없는 것이 없는데 이번에 가는 것이 없는데 그렇게 되었다면 하게 되었다면 다시 때문에 없다. | (-). |
| | | | ing some damin's seer | e and corresponding | |
| | | | | | (10) |
| | | | Ty | | (10) |
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| 1 2 | | | | | |
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| 4 | | | | | |
| 5 | FALSE | TRUE | | | |
| .6 | FALSE | TRUE | NO . | | |
| | i. : | . Pa | art B | | |
| Find out and | draw negative | plane, positive pl | lane and hyper plane | for the following data. | (10) |
| | | | | | |
| Class | Positive | Negative | Negative | Positive | |
| | 0 . | 1 | 2 | 3 | |
| | l mean = 28 ar | nd variance =2. Fi | ind best mean using r | naximum likelihood | (5) |
| method if data point is $X = 30$. | | | | | |
| | | | | | |
| Find within the class and between the class separability of two classes for following data points. | | | | | (10) |
| $X1 = \{(1,1),$ | (1.2)3 | | | | |
| A1 {(1,1), | (1,2)? | | | | 1 |
| | (b) What (c) How (d) What (e) What (a) Deriv Norm (b) What What (a) Calculate are classified reviews, 255 positive. (b) What is th with the help sigmoid (score Solve decision Examples 1 2 3 4 5 6 Find out and Separate the Class Data (X1) (a) Let, Initial method if dat (b) Compare Find within the service of the serv | (b) What is the residual (c) How value of param (d) What will be the val (e) What is the differen (a) Derive equation for Normal equation me (b) What is the model of What will be varian (a) Calculate precision, recal are classified correctly and reviews, 255 are actually classified. (b) What is the importance of with the help of a numerical sigmoid (score) values. Let Solve decision tree using end Examples X1 1 TRUE 2 TRUE 3 TRUE 4 FALSE 5 FALSE 6 FALSE 6 FALSE Find out and draw negative Separate the classes using and the class and be compared to the class and be classes using and the class and be classes and be classes. | (b) What is the residual sum of square mode (c) How value of parameter/weight affect (d) What will be the value of sigmoid fur (e) What is the difference between PCA Part (a) Derive equation for theta/parameter/Normal equation method (using matrown (b) What is the model complexity? How What will be variance or bias values (a) Calculate precision, recall, accuracy and Fare classified correctly and remaining 170 are reviews, 255 are actually classified as negative positive. (b) What is the importance of theta/weight/pawith the help of a numerical example including sigmoid (score) values. Let threshold be 0.5. Solve decision tree using entropy method Examples X1 X2 1 TRUE TRUE 2 TRUE TRUE 3 TRUE FALSE 4 FALSE FALSE 5 FALSE TRUE 6 FALSE TRUE Find out and draw negative plane, positive properties of the provided provided plata (X1) 0 1 1 (a) Let, Initial mean = 28 and variance = 2. From the point is X = 30. (b) Compare K means clustering and Gaussian Find within the class and between the class series and betw | (b) What is the residual sum of square method? (c) How value of parameter/weight affects the prediction? (d) What will be the value of sigmoid function if score is infin (e) What is the difference between PCA and ICA? Part A (a) Derive equation for theta/parameter/weights matrix with read Normal equation method (using matrices). (b) What is the model complexity? How it can lead to underfit What will be variance or bias values for underfitting and of a classified correctly and remaining 170 are classified as negative reviews, 255 are actually classified as negative. Whereas remaining positive. (b) What is the importance of theta/weight/parameter in linear class with the help of a numerical example including some dummy score sigmoid (score) values. Let threshold be 0.5. Solve decision tree using entropy method Examples X1 | (b) What is the residual sum of square method? (c) How value of parameter/weight affects the prediction? (d) What will be the value of sigmoid function if score is infinity? (e) What is the difference between PCA and ICA? Part A (a) Derive equation for theta/parameter/weights matrix with regularization using Normal equation method (using matrices). (b) What is the model complexity? How it can lead to underfitting or overfitting? What will be variance or bias values for underfitting and overfitting? (a) Calculate precision, recall, accuracy and F1 score. If, out of 700 positive reviews 530 are classified correctly and remaining 170 are classified as negative. Out of 300 negative reviews, 255 are actually classified as negative. Whereas remaining 45 are classified as positive. (b) What is the importance of theta/weight/parameter in linear classification? Explain with the help of a numerical example including some dummy score and corresponding sigmoid (score) values. Let threshold be 0.5. Solve decision tree using entropy method Examples X1 |

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