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BRIAN LOUGHRAN 13 ▼

EN.605.647.83.SP21 Neural Networks   Course Modules   Midterm Examination   Review Test Submission: Mid-Term Exam Part B

Review Test Submission: Mid-Term Exam Part B

User	BRIAN THOMAS LOUGHRAN
Course	EN.605.647.81.SP21 Neural Networks
Test	Mid-Term Exam Part B
Started	4/11/21 3:34 PM
Submitted	4/11/21 4:11 PM
Due Date	4/11/21 11:59 PM
Status	Completed
Attempt Score	Grade not available.
Time Elapsed	37 minutes out of 45 minutes
Results Displayed	Submitted Answers, Incorrectly Answered Questions

Question 1   0 out of 5 points

Let the matrix in P4:PR-A be the weight matrix in a Hopfield Network where the hardlimiting function in P4:PR-B is used to map vector elements into bipolar values. Starting with an input vector V^T = (1, -1, 1, 1, -1) and using *asynchronous* updating, determine the state vector after updating just the first node in the associated network (corresponding to the first vector element), then use the resulting state vector to update the second node (2nd vector element) and so on until all the vector elements have been updated. The final state vector is:

Selected Answer: $(1, -1, 1, 1, -1)^T$

Question 2   0 out of 5 points

Using the Hecht-Nielsen (H-N) function in P4:PR-C, calculate the H-N value using the intial state vector (1, -1, 1, 1, -1) and the weight matrix in P4:PR-A.

The H-N function value (in integer values) is:

Selected Answer: 2

Question 3   0 out of 5 points

Using the matrix in P4:PR-A in a Hopfield Network and the hardlimiting function in P4:PR-B and again starting with an input vector V^T = (1, -1, 1, 1, -1), use *synchronous* updating to determine the state vector. The updated state vector is:

Selected Answer: $(1, -1, 1, 1, -1)^T$

Question 4　　　　　　　　　　　　　　　　　　　　0 out of 5 points

Using the Hecht-Nielsen (H-N) function in P4:PR-C and the weight matrix in P4:PR-A, calculate the H-N value using the state vector you obtained from *asynchronous* updating.

The H-N function value (in integer values) is:

Selected Answer:　　2

Question 5　　　　　　　　　　　　　　　　　　　　5 out of 5 points

Given the following confusion matrix where the column labelled "C" indicates subjects who have a condition or characteristic and the column heading "Not C" corresponds to those subjects without the condition or characteristic and where the row labelled "D" indicates the corresponding numbers of subjects for which some detection of the condition or characteristic occurs and the row marked "Not D" indicates subjects for which the condition or characteristic was not detected, indicate the estimated probability that a person has the condition if they've been told they tested positive for it.

	C	Not C
D	30	50
Not D	5	40

Selected Answer:　　0.375

Question 6　　　　　　　　　　　　　　　　　　　　5 out of 5 points

If a subject tests negative for the condition, what is the level of assurance that he/she can assume that he/she actually does not have the condition?

Selected Answer:　　0.8888

Sunday, April 11, 2021 4:11:55 PM EDT

← **OK**