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 NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Deep Learning - IIT Ropar (course)


Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

week 4

Week 5

☐ Eigenvalues and Eigenvectors (unit? unit=70&lesson=71)

☐ Linear Algebra : Basic Definitions (unit? unit=70&lesson=72)

Assignment 5

The due date for submitting this assignment has passed.

Due on 2021-02-24, 23:59 IST.

Assignment submitted on 2021-02-24, 22:36 IST

1) The largest(dominant) Eigen value of a stochastic matrix is _____

1 point

☐ 0

☒ 1

☐ -1

☐ 2

Yes, the answer is correct.

Score: 1

Accepted Answers:

1

 2) The set of vectors R_n is called a basis, if they are linearly dependent and every vector R_n can be expressed as a linear combination of these vectors. State whether the above statement is true or false? **1 point**
☒ True

☐ False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

 3) Eigen value which is _____ all other Eigen value is called as Dominant Eigenvalue. **1 point**

☐ Eigenvalue Decomposition (unit? unit=70&lesson=73)

☐ Principal Component Analysis and its Interpretations (unit? unit=70&lesson=74)

☐ PCA : Interpretation 2 (unit? unit=70&lesson=75)

☐ PCA : Interpretation 3 (unit? unit=70&lesson=76)

☐ PCA : Interpretation 3 (Contd.) (unit? unit=70&lesson=77)

☐ PCA : Practical Example (unit? unit=70&lesson=78)

☐ Singular Value Decomposition (unit? unit=70&lesson=79)

☒ Lecture Material for Week 5 (unit? unit=70&lesson=80)

☒ **Quiz: Assignment 5 (assessment? name=183)**

☐ Week 5 Feedback Form : Deep Learning - IIT Ropar (unit? unit=70&lesson=81)

Week 6

Week 7

Week 8

- ☒ Greater than
☐ Lesser than
☐ Equal to
☐ Either lesser or greater than

No, the answer is incorrect.

Score: 0

Accepted Answers:

Lesser than

4) The Eigen vectors of a square symmetric matrix are _____.

1 point

- ☒ Orthogonal.
☐ Diagonal.
☐ Symmetric.
☐ None of these.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Orthogonal.

5) If X is a matrix such that its columns have zero mean and if $\hat{X} = XP$, then the columns of \hat{X} will also have zero mean.

1 point

- ☒ True
☐ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

True

6) Related to the Eigen vector of a matrix $A \in R^{n \times n}$, which of the following is true?

1 point

- ☐ Distinct Eigen values are linearly dependent.
☒ Distinct Eigen values are linearly independent.
☐ Distinct Eigen values are non-linearly independent.
☐ None of these.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Distinct Eigen values are linearly independent.

7) S_1 and S_2 are two statements related to the Principal component analysis for transforming a data to a new basis.

1 point

S_1 : The dimensions are non-redundant(low covariance).

S_2 : The dimensions are not noisy(high variance).

- ☐ Only S_1 is true.
☐ Only S_2 is true.
☒ Both S_1 and S_2 are true.

Week 9**week 10****Week 11****Week 12****Download
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☐ Both S_1 and S_2 are false.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Both S_1 and S_2 are true.

8) Rectangular matrices $A \in \mathbb{R}^{m \times n}$ have Eigen vectors. State whether it is true or false. **1 point**

☐ True

☒ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

False

9) Does Eigen decomposition always exist for a square matrix?

1 point

☐ True

☒ False

No, the answer is incorrect.

Score: 0

Accepted Answers:

True

10) A set of n vectors $v_1, v_2, v_3, \dots, v_n$ is linearly independent, if no vector in the set can be expressed as a linear combination of the remaining $n+1$ vectors. State whether the above statement is true or false. **1 point**

☒ True

☐ False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False