

Unit 16 - Week 12: Machine Learning - III

Course outline

How to access the portal

Week 0: Prerequisites

Week 1: AI and AI Problem Solving

Week 2: Problem Solving by Search - I

Week 3: Problem Solving by Search - II

Week 4: Knowledge Representation and Reasoning - I

Week 5: Knowledge Representation and Reasoning - II

Live Session-1

Week 6: Knowledge Representation and Reasoning - III

Week 7: Reasoning under Uncertainty

Week 8: Planning

Week 9: Planning and Decision Making

Live Session-2

Week 10: Machine Learning -I

Week 11: Machine Learning - II

Week 12: Machine Learning - III

Lec 1: Reinforcement Learning

Lec 2: Learning in Neural Networks

Lec 3: Deep Learning: A Brief Overview

Quiz : Assignment 12

Feedback Form

Assignment 12

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-10-23, 23:59 IST.

1) The first computational model of a neuron that sums binary inputs and outputs 1 if the sum exceeds a certain threshold value, and otherwise outputs 0 is the _____ **1 point**

- A. Perceptron
 B. McCulloch and Pitts Model
 C. Restricted Boltzmann Machine
 D. Multi-layer Perceptron

No, the answer is incorrect.
Score: 0

Accepted Answers:
B. McCulloch and Pitts Model

2) A computational model of a single neuron that can only represent linearly separable functions is the _____ **1 point**

- A. Perceptron
 B. Restricted Boltzmann Machine
 C. Autoencoder
 D. Convolutional Layer

No, the answer is incorrect.
Score: 0

Accepted Answers:
A. Perceptron

3) Major breakthrough in 2006 by Hinton lead to a fast and efficient way of training Deep Belief Networks by stacking _____ one above the other. **1 point**

- A. Restricted Boltzmann Machine
 B. Perceptron
 C. Multi-layer Perceptron
 D. Support vector machines

No, the answer is incorrect.
Score: 0

Accepted Answers:
A. Restricted Boltzmann Machine

4) A Reinforcement Learning (RL) agent may include one or more of these components: Policy, Value function and Model. Which of the following statements are true in the context of a RL agent? **1 point**

- I. A policy is the agent's behaviour and is a map from state to action.
 II. Value function is a prediction of the next state.
 III. A model is the agent's representation of the environment and predicts what the agent will do next.

- A. Statements I and II
 B. Statements I and III
 C. Statements II and III
 D. Statements I, II and III

No, the answer is incorrect.
Score: 0

Accepted Answers:
B. Statements I and III

5) The "goal" of a RL system is defined using the concept of a _____ **1 point**

- A. Policy
 B. Reinforcement function
 C. Goal predicate
 D. Value function

No, the answer is incorrect.
Score: 0

Accepted Answers:
B. Reinforcement function

6) In reinforcement learning, rather than finding a mapping from states to state values, _____ finds a mapping from state/action pairs to values. **1 point**

- A. Value Iteration
 B. Q-learning
 C. Reinforcement function
 D. Value function

No, the answer is incorrect.
Score: 0

Accepted Answers:
B. Q-learning

7) In _____ each unit is linked only to units in the next layer; there are no links between units in the same layer, no links backward to a previous layer, and no links that skip a layer. **1 point**

- A. Convolutional Neural Network
 B. Layered feed-forward network
 C. Recurrent Neural Network
 D. Deep Belief Network

No, the answer is incorrect.
Score: 0

Accepted Answers:
B. Layered feed-forward network

8) A key difference between traditional Machine Learning (ML) and Deep Learning (DL) is in how features are extracted. Which of the following statements are true? **1 point**

- I. Traditional ML approaches use handcrafted engineering features by applying several feature extraction algorithms, and then apply the learning algorithms.
 II. In the case of DL, the features are learned automatically and are represented hierarchically in multiple levels.

- A. Statements I and II
 B. Only statement I
 C. Only statement II
 D. None of above

No, the answer is incorrect.
Score: 0

Accepted Answers:
A. Statements I and II

9) In this type of network, a loop allows information to be passed from one step of the network to the next. A _____ can be thought of as multiple copies of the same network, each network passing a message to a successor. **1 point**

- A. Multi-layer Perceptron Network.
 B. Convolutional Neural Network.
 C. Recurrent Neural Network.
 D. Deep Belief Network.

No, the answer is incorrect.
Score: 0

Accepted Answers:
C. Recurrent Neural Network.

10) The layers involved in any CNN model are the convolution layers and the subsampling / pooling layers which allow the network learn filters that are specific to specific parts in an image. Which of the following are true? **1 point**

- I. The convolution layers help the network retain the spatial arrangement of pixels that is present in any image.
 II. The pooling layers allow the network to summarize the pixel information.

- A. Only statement I.
 B. Statements I and II.
 C. Only statement II.
 D. None of above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
B. Statements I and II.