Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 80%. We keep your highest score.

Next item →

1. Which of the following are signs of a model that is overfitting? 1 / 1 point

- [ ] The model performs equally well on both training and validation data.
- [x] The model performs well on training data but poorly on validation data.

Correct
Correct! Overfitting occurs when the model captures noise in the training data, leading to poor performance on validation data.

- [ ] The model's performance improves as more noise is added to the training data.
- [x] The model has high variance.

Correct
Right! High variance indicates that the model is sensitive to fluctuations in the training data, a common sign of overfitting.

2. What is the primary purpose of splitting data into training, validation, and test sets? 1 / 1 point

- ( ) To reduce the computational cost of training the model.
- ( ) To increase the model's accuracy on the training data.
- (•) To evaluate the model's performance on unseen data.
- ( ) To simplify the training process.

Correct
Correct! Splitting the data helps in assessing how well the model will perform on new, unseen data.

3. Which of the following steps are part of performing a complete backward pass in a neural network? 1 / 1 point

- [ ] Calculate the dot product of the input and weights
- [x] Calculate the gradient of the loss with respect to each weight

Correct
Correct! Calculating the gradient of the loss with respect to each weight is a crucial step in the backward pass.

- [x] Compute the derivative of the activation function

Correct
Correct! Computing the derivative of the activation function is an important part of the backward pass.

- [x] Update the weights using the calculated gradients and the learning rate

Correct
Correct! Updating the weights using the gradients and learning rate is essential during the backward pass.

- [ ] Initialize weights and biases
- [ ] Preprocess and scale training data

4. Which of the following metrics can be used to evaluate a neural network's performance? 1 / 1 point

- [ ] Learning rate
- [ ] Training time
- [x] Confusion matrix

Correct
Good job! A confusion matrix provides detailed insights into the performance of a classification model.

- [x] Loss function value

Correct
Correct! The value of the loss function indicates how well the neural network is performing.

- [x] Accuracy

Correct
Correct! Accuracy is one of the primary metrics used to evaluate a neural network's performance.

5. Which of the following best describes the role of the optimizer in neural network training? 1 / 1 point

- (●) It updates the weights and biases using the calculated gradients
- ( ) It adjusts the learning rate during training
- ( ) It computes the loss function
- ( ) It normalizes the input data

Correct
Well done! The optimizer uses the gradients calculated during backpropagation to update the weights and biases, thereby minimizing the loss.