

✔ Congratulations! You passed!

Grade received 100% To pass 80% or higher

Go to next item

1. What is the purpose of having a validation set for a model?

1 / 1 point

- ☐ To test the model by seeing how it performs on some "hard cases" in the dataset.
- ☐ To provide some extra data that can be used to train the model.
- ☐ To check the performance of the model and remove the need for a test set.
- ☒ To evaluate the generalisation performance of the model, check for overfitting, and allow for hyperparameter tuning.

✔ Correct
Correct, well done!

2. Which of these is NOT an example of regularisation?

1 / 1 point

- ☐ Weight decay
- ☐ Early stopping
- ☒ Backpropagation
- ☐ Data augmentation

✔ Correct
Correct, well done! Backpropagation is an efficient algorithm to calculate gradients

3. How can using early stopping improve the performance of a model?

1 / 1 point

- ☐ It trains the model more quickly, allowing more complex models to be used with little added training time.
- ☒ It can prevent overfitting on the training set, and therefore improve performance on the test set.
- ☐ It can stop the weights and biases varying much from their initial values, so the model has a memory of its starting state.
- ☐ It allows the model to skip over hidden layers that have caused the model to perform poorly during training.

✔ Correct
Correct, well done!

4. A popular method used to reduce overfitting in neural networks is the inclusion of (Bernoulli) dropout layers. Given a dropout rate of 0.3 on a layer with n neurons, what is the probability that only one of the neurons is dropped out?

1 / 1 point

- ☐ 0.7
- ☐ $n(0.7)(0.3)^{n-1}$
- ☐ 0.3
- ☒ $n(0.3)(0.7)^{n-1}$

✔ Correct
Correct, well done!