Congratulations! You passed!
TO PASS 70% or higher

Keep Learning

GRADE
100%

Phase 3. Project 2

LATEST SUBMISSION GRADE
100%

1. What is a pro of using k-fold cross-validation instead of a hold-out validation set for hyperparameter tuning? **1 / 1 point**

- Requires less overall time to train a model, due to the reduced number of training samples
- Regularizes the model by randomly selecting training examples automatically
- Improves model convergence rates because many hyperparameters can be tested at the same time
- (selected) Produces a more reliable estimate of the generalization performance of the model

Correct
Because generalization performance is estimated k times, it provides a potentially more stable estimate of the generalization performance than using a single validation set.

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Graded Quiz • 30 min
Due Mar 29, 2:59 PM CST

- (selected) Requires more overall time to train a model, due to the repeated training runs associated with each experiment
- Increases the number of parameters in the overall model, which leads to overfitting
- Decreases model generalization performance because the model is able to learn on the test set
- Increases the overall memory requirements of the model during training, due to the higher number of samples seen during training

Correct
k-fold cross-validation requires running the model training procedure k times, which thus increases the overall training time significantly.

3. What are common criteria used for early stopping? **Check all that apply**. **1 / 1 point**

- [x] Validation loss

Correct
The validation set should be used for hyperparameter tuning and early stopping, as it gives us our best approximation of generalization performance. Depending on the use case, it is acceptable to use loss.

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- [ ] Test loss
- [ ] Training loss
- [x] Validation AUROC

Correct
The validation set should be used for hyperparameter tuning and early stopping, as it gives us our best approximation of generalization performance. Depending on the use case, it is acceptable to use AUROC.

- [ ] Training AUROC

4. Which of the following hyperparameters are exclusive to deep learning models? **Check all that apply**. **1 / 1 point**

- [x] Dropout probability

Correct
Dropout requires the model to have neurons, often many neurons. This makes it particularly well suited for deep learning models.

- [x] Number of layers

Correct
Traditional machine learning models can only have at most 1 layer, so the number of layers can only be tuned in deep learning models.

- [ ] Class weights (loss function)
- [ ] Learning rate