English V Due Sep 15, 11:59 PM-03

Graded Quiz * 30 min

Congratulations! You passed!

Go to next item Grade Latest Submission To pass 80% or received 100% Grade 100% 1/1 point Diagnosing bias and variance How do you tell if your algorithm has a bias or variance problem? High bias (underfit) $J_{train} \text{ will be high} \left(\frac{J_{train} \approx J_{cv}}{} \right)$ High bias and high variance J_{train} will be high and $J_{cv} \gg J_{train}$ degree of polynomial If the model's cross validation error J_{cv} is much higher than the training error J_{train} , this is an indication that the O Low bias high bias high variance When $J_{cv}>>J_{train}$ (whether J_{train} is also high or not, this is a sign that the model is overfitting to the training data and performing much worse on new examples. 1/1 point Bias/variance examples Baseline performance : 10.6% 0.2% 10.6%high high bias variance bias high variance Which of these is the best way to determine whether your model has high bias (has underfit the training data)? See if the cross validation error is high compared to the baseline level of performance Compare the training error to the baseline level of performance See if the training error is high (above 15% or so) Ompare the training error to the cross validation error. Correct. If comparing your model's training error to a baseline level of performance (such as human level performance, or performance of other well-established models), if your model's training error is much higher, then this is a sign that the model has high bias (has underfit). 1/1 point Debugging a learning algorithm You've implemented regularized linear regression on housing prices $J(\overrightarrow{w},b) = \frac{1}{2m} \sum_{i=1}^{m} \left(f_{\overrightarrow{w},b}(\overrightarrow{x}^{(i)}) - y^{(i)}\right)^2 + \frac{1}{2m} \sum_{j=1}^{n} w_j^2$ But it makes unacceptably large errors in predictions. What do you try next? \rightarrow Try increasing λ fixes high variance performance? Hint: two of these are correct. Collect additional features or add polynomial features Correct
 Correct. More features could potentially help the model better fit the training examples. Remove examples from the training set ☐ Collect more training examples lacksquare Decrease the regularization parameter λ (lambda) Correct. Decreasing regularization can help the model better fit the training data. 1/1 point You find that your algorithm has a training error of 2%, and a cross validation error of 20% (much higher than the training error). Based on the conclusion you would draw about whether the algorithm has a high bias or high $variance\ problem, which\ of\ these\ seem\ like\ good\ options\ for\ improving\ the\ algorithm's\ performance?\ Hint:\ two\ of\ problem,$ these are correct. igrtiangledown Increase the regularization parameter λ Yes, the model appears to have high variance (overfit), and increasing regularization would help reduce high variance. Collect more training data Yes, the model appears to have high variance (overfit), and collecting more training examples would help reduce high variance.

Reduce the training set size