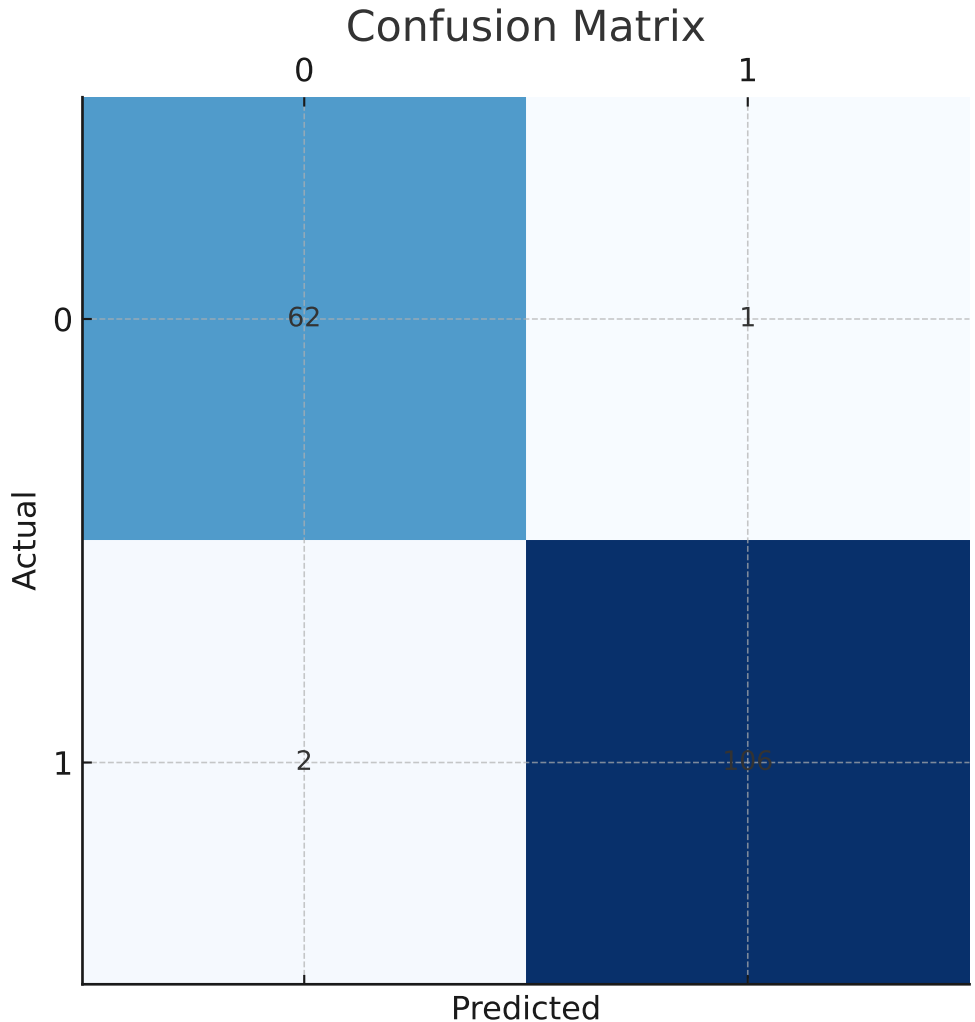
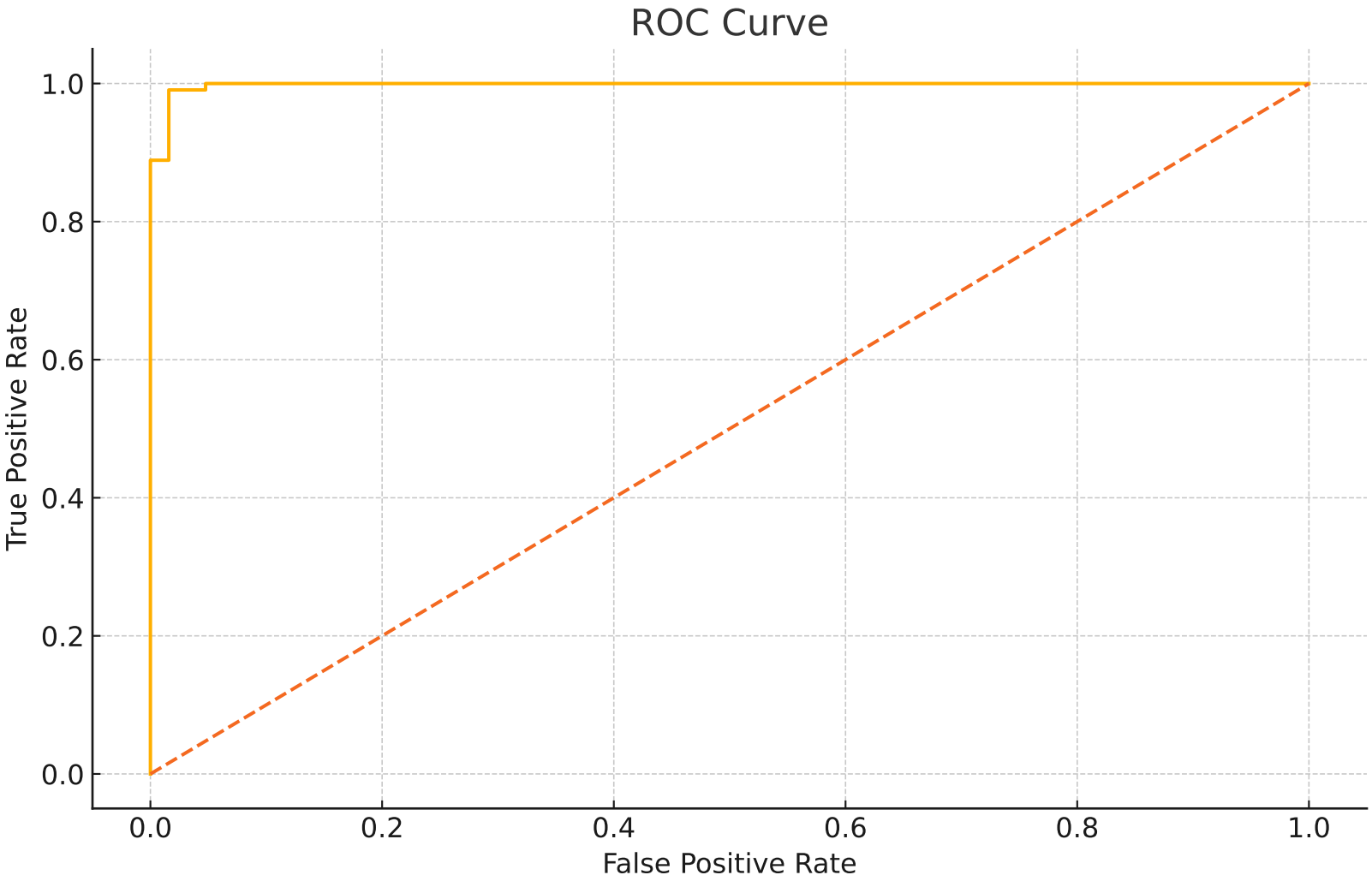
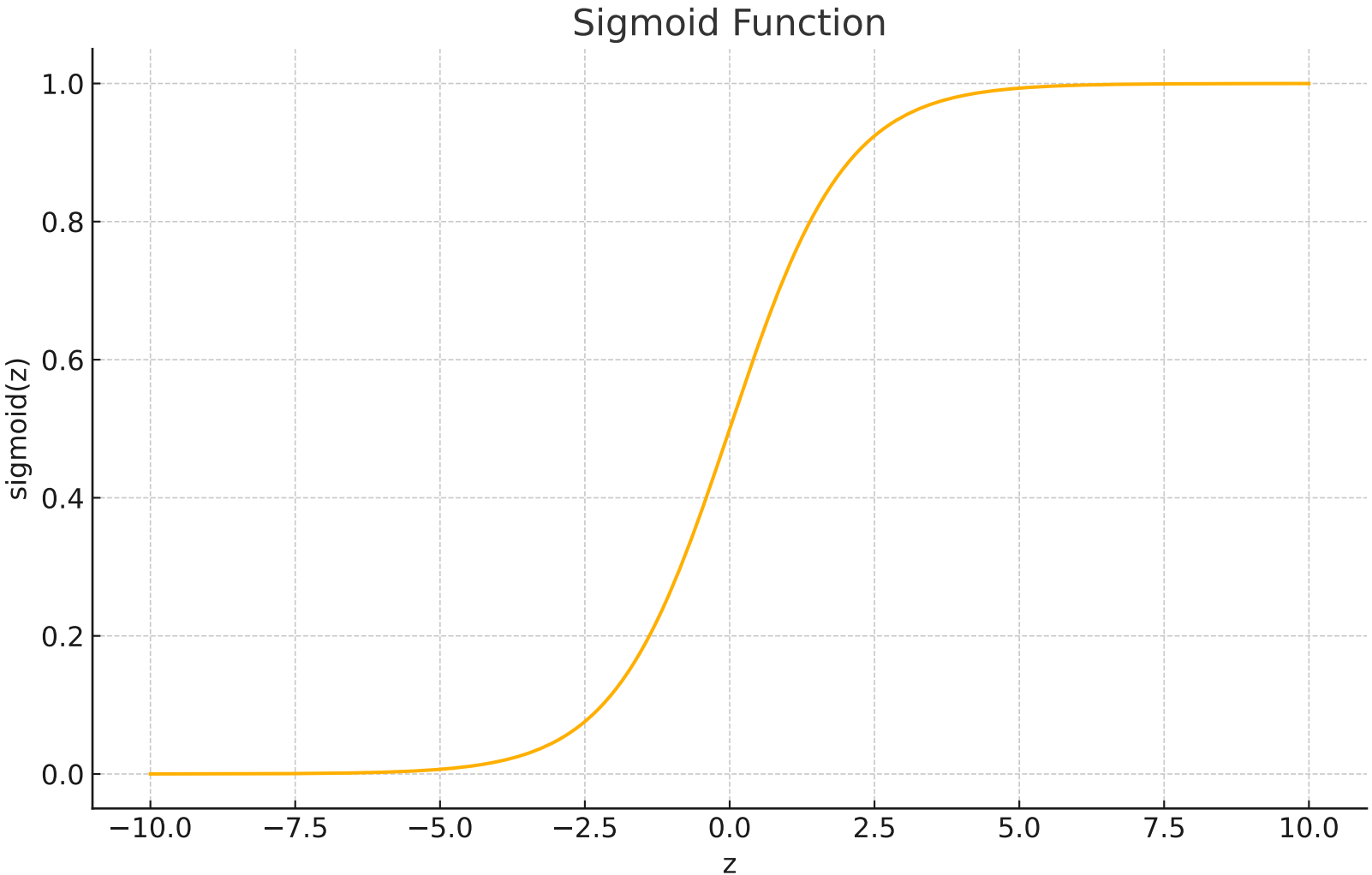
Classification Report:

	precision	recall	f1-score	support
0	0.97	0.98	0.98	63
1	0.99	0.98	0.99	108
accuracy			0.98	171
macro avg	0.98	0.98	0.98	171
weighted avg	0.98	0.98	0.98	171

ROC AUC: 0.998


Confusion Matrix
0
1
0
1
62
1
2
106
Actual
Predicted


ROC Curve
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0


Sigmoid Function
1.0
0.8
0.6
0.4
0.2
0.0
sigmoid(z)
−10.0
−7.5
−5.0
−2.5
0.0
2.5
5.0
7.5
10.0
z

1. How does logistic regression differ from linear regression?

Logistic regression predicts probabilities using a sigmoid transformation of a linear

2. What is the sigmoid function?

The sigmoid function is σ(z) = 1 / (1 + exp(-z)), which maps any real-valued input t

3. What is precision vs recall?

Precision is TP/(TP+FP), measuring correctness of positive predictions; recall is TP/(

4. What is the ROC-AUC curve?

ROC-AUC plots the True Positive Rate vs False Positive Rate at various thresholds; t

5. What is the confusion matrix?

A confusion matrix is a table showing counts of True Positives, False Positives, False

6. What happens if classes are imbalanced?

With imbalanced classes, metrics like accuracy can be misleading. You may need r

7. How do you choose the threshold?

Choose a threshold based on the desired tradeoff between precision and recall—co

8. Can logistic regression be used for multi-class problems?

Yes, by using one-vs-rest (OvR) or a softmax extension (multinomial logistic regres