```
/content/Project.csv
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import tensorflow as tf
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense, Dropout
from tensorflow.keras.metrics import AUC, Accuracy, Recall
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import classification_report, roc_curve
import matplotlib.pyplot as plt

# Assume X_train, X_test, y_train, y_test are already prepared and scaled appropriately

# Define the Keras model
model = Sequential()
model.add(Dense(64, input_dim=X_train.shape[1], activation='relu'))
model.add(Dropout(0.5))
model.add(Dense(64, activation='relu'))
model.add(Dropout(0.5))
model.add(Dense(1, activation='sigmoid'))

# Compile the model
model.compile(loss='binary_crossentropy',
              optimizer='adam',
              metrics=['accuracy', Recall(), AUC(name='auc')])

# Train the model
history = model.fit(X_train, y_train, epochs=10, batch_size=64, validation_data=(X_test, y_test))

# Evaluate the model
scores = model.evaluate(X_test, y_test)
print("\n%s: %.2f%%" % (model.metrics_names[1], scores[1]*100))

# Predict probabilities
y_pred_proba_dl = model.predict(X_test).ravel()

# Calculate ROC curve
fpr_dl, tpr_dl, thresholds_dl = roc_curve(y_test, y_pred_proba_dl)

# Plot ROC curve
plt.figure(figsize=(10, 8))
plt.plot(fpr_dl, tpr_dl, label='Deep Learning (area = %0.2f)' % scores[2])
plt.xlabel('False Positive Rate')
plt.ylabel('True Positive Rate')
plt.title('ROC Curve')
plt.legend(loc='lower right')
plt.show()

# Classification report
y_pred_dl = (y_pred_proba_dl > 0.5).astype(int)
print(classification_report(y_test, y_pred_dl))
```
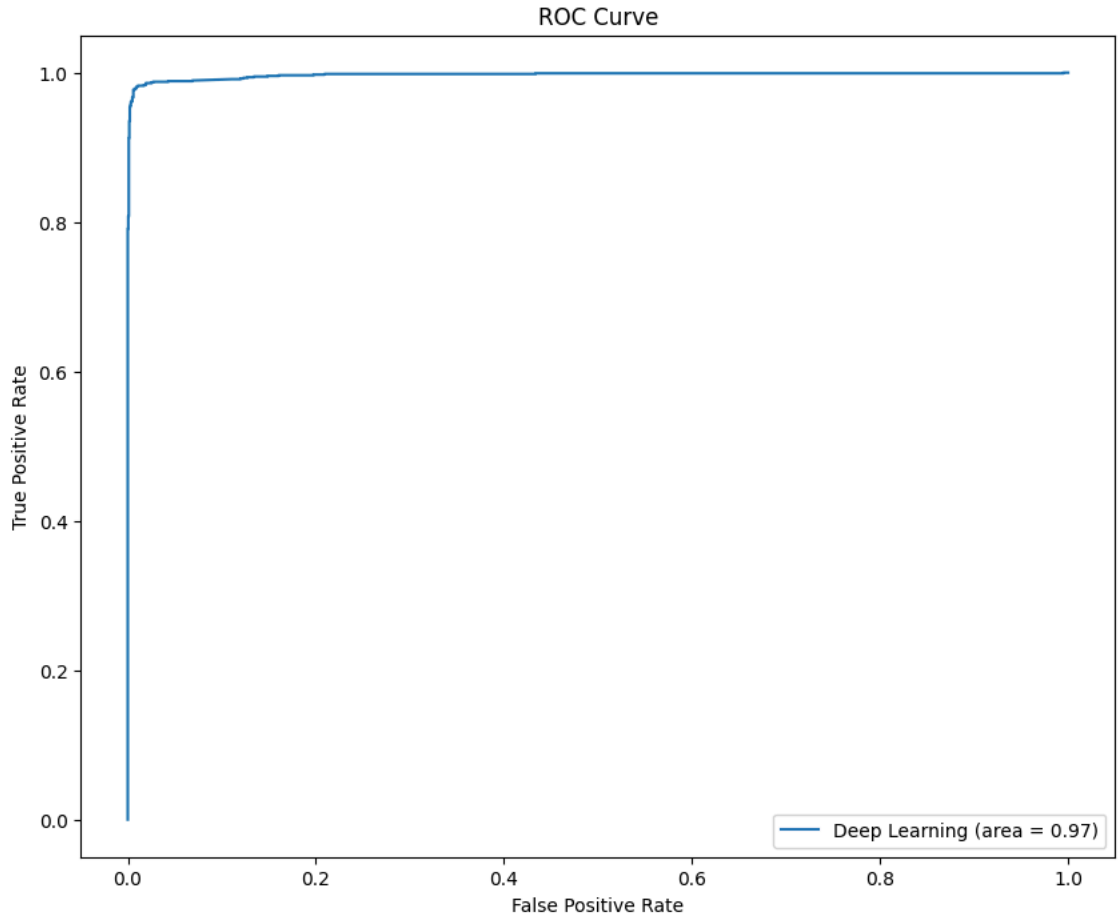

```
Epoch 1/10
188/188 [==============================] - 5s 8ms/step - loss: 0.2698 - accuracy: 0.8924 - recall_1: 0.8272 - auc: 0.9553 - val_loss: 0
Epoch 2/10
188/188 [==============================] - 1s 4ms/step - loss: 0.1088 - accuracy: 0.9638 - recall_1: 0.9425 - auc: 0.9913 - val_loss: 0
Epoch 3/10
188/188 [==============================] - 1s 4ms/step - loss: 0.0847 - accuracy: 0.9711 - recall_1: 0.9542 - auc: 0.9941 - val_loss: 0
Epoch 4/10
188/188 [==============================] - 1s 4ms/step - loss: 0.0665 - accuracy: 0.9774 - recall_1: 0.9624 - auc: 0.9963 - val_loss: 0
Epoch 5/10
188/188 [==============================] - 1s 4ms/step - loss: 0.0566 - accuracy: 0.9822 - recall_1: 0.9724 - auc: 0.9969 - val_loss: 0
Epoch 6/10
188/188 [==============================] - 1s 4ms/step - loss: 0.0556 - accuracy: 0.9819 - recall_1: 0.9692 - auc: 0.9972 - val_loss: 0
Epoch 7/10
188/188 [==============================] - 1s 4ms/step - loss: 0.0511 - accuracy: 0.9847 - recall_1: 0.9751 - auc: 0.9972 - val_loss: 0
Epoch 8/10
188/188 [==============================] - 1s 4ms/step - loss: 0.0442 - accuracy: 0.9854 - recall_1: 0.9771 - auc: 0.9976 - val_loss: 0
Epoch 9/10
188/188 [==============================] - 1s 4ms/step - loss: 0.0403 - accuracy: 0.9874 - recall_1: 0.9792 - auc: 0.9981 - val_loss: 0
Epoch 10/10
188/188 [==============================] - 1s 4ms/step - loss: 0.0382 - accuracy: 0.9884 - recall_1: 0.9803 - auc: 0.9986 - val_loss: 0
94/94 [==============================] - 0s 2ms/step - loss: 0.0664 - accuracy: 0.9850 - recall_1: 0.9703 - auc: 0.9961

accuracy: 98.50%
94/94 [==============================] - 0s 3ms/step
```



	precision	recall	f1-score	support
0	0.98	0.99	0.99	1863
1	0.99	0.97	0.98	1145
accuracy			0.99	3008
macro avg	0.99	0.98	0.98	3008
weighted avg	0.99	0.99	0.99	3008