**Model Evaluation Code**

from sklearn.metrics import classification\_report, roc\_auc\_score

import numpy as np

# Load the trained model

model = tf.keras.models.load\_model('fake\_colorized\_image\_detection\_model.h5')

# Evaluate model on the validation set

validation\_steps = validation\_generator.samples // validation\_generator.batch\_size

predictions = model.predict(validation\_generator, steps=validation\_steps, verbose=1)

y\_true = validation\_generator.classes[:len(predictions)]

y\_pred = (predictions > 0.5).astype(np.int)

# Classification report

print(classification\_report(y\_true, y\_pred, target\_names=['Real', 'Fake']))

# AUC-ROC score

roc\_auc = roc\_auc\_score(y\_true, predictions)

print(f'AUC-ROC: {roc\_auc:.3f}')