Personal Project_04_v10_test1_4conv-layer_run47_advanced control 3_autorun

May 6, 2025

```python
[1]: from tensorflow.keras.callbacks import LearningRateScheduler
     from sklearn.metrics import classification_report, confusion_matrix
     import pandas as pd
     import numpy as np
     import matplotlib.pyplot as plt
     %matplotlib inline
     import matplotlib.image as mpimg
     import tensorflow as tf
     import os


     ACC=0.1
     try_num = 1

     while (ACC<0.87 and try_num<40):
         # DOE factors:
         learning_rate = 0.005
         dropout_value = 0.2
         # n-conv_layers = 4
         n_units_last_layer = 1024
         n_filters_l1 = 8
         n_filters_l2 = 16

         # other factors:
         img_size = 130
         batch_size = 32
         validation_split = 0.1   # 10% for validation
         test_split = 0.00   # 0% for testing
         shuffle_buffer_size = 1000
         seed_num = 101
         desired_accuracy = 0.99   # it should be active if EarlyStoppingCallback is␣
     ↪activated
         loss = 'binary_crossentropy'
         #optimizer = tf.keras.optimizers.RMSprop(learning_rate=learning_rate)
         optimizer = tf.keras.optimizers.Adam(learning_rate=learning_rate)
         metrics = ['accuracy']
```

```python
    epochs = 60
    f_mode = 'nearest'  # fill_mode in image augmentation

    #DATA_DIR = "D:\\CS online courses\\Free DataSets\\Free Images\\Easier␣
 ↪portrait images_GPU_03"
    DATA_DIR = "/Users/hossein/Downloads/Easier portrait images_GPU_03"

    # Subdirectories for each class
    data_dir_woman = os.path.join(DATA_DIR, 'woman')
    data_dir_man = os.path.join(DATA_DIR, 'man')
    image_size = (img_size, img_size)  # Resize images to this size

    # Load train dataset (excluding validation & test set):
    train_dataset = tf.keras.utils.image_dataset_from_directory(
        directory = DATA_DIR,
        image_size = image_size,
        batch_size = batch_size,
        label_mode='binary',
        validation_split = validation_split + test_split,  # Total split for␣
 ↪val + test
        subset = "training",
        seed = seed_num
    )
    # Load validation dataset
    val_dataset = tf.keras.utils.image_dataset_from_directory(
        directory = DATA_DIR,
        image_size = image_size,
        batch_size = batch_size,
        label_mode='binary',
        validation_split = validation_split + test_split,
        subset = "validation",
        seed = seed_num
    )
    # Further manually split validation dataset to extract test dataset
    val_batches = tf.data.experimental.cardinality(val_dataset)
    # Compute test dataset size (number of batches)
    test_size = round(val_batches.numpy() * (test_split / (validation_split +␣
 ↪test_split)))
    # Split validation dataset into validation and test subsets
    test_dataset = val_dataset.take(test_size)
    val_dataset = val_dataset.skip(test_size)
    # Optimize for performance
    AUTOTUNE = tf.data.AUTOTUNE
    training_dataset = train_dataset.cache().shuffle(shuffle_buffer_size).
 ↪prefetch(buffer_size = AUTOTUNE)
    validation_dataset = val_dataset.cache().prefetch(buffer_size = AUTOTUNE)
    test_dataset = test_dataset.cache().prefetch(buffer_size = AUTOTUNE)
```

```python
    # Get the first batch of images and labels
    for images, labels in training_dataset.take(1):
            example_batch_images = images
            example_batch_labels = labels
    max_pixel = np.max(example_batch_images)

    def scheduler(epoch, lr):
        if epoch < 10:
            if epoch % 5 == 0 and epoch > 0:
                return lr / 1
            return lr
        elif epoch < 15:
            if epoch % 5 == 0 and epoch > 0:
                return lr / 1
            return lr
        elif epoch < 30:
            if epoch % 5 == 0 and epoch > 0:
                return lr / 1
            return lr
        return lr
    lr_callback = LearningRateScheduler(scheduler)

    # augmentation_model
    def augment_model():
        augmentation_model = tf.keras.Sequential([
            # Specify the input shape.
            tf.keras.Input(shape = (img_size, img_size, 3)),
            tf.keras.layers.RandomFlip("horizontal"),
            tf.keras.layers.RandomRotation(0.1, fill_mode = f_mode),
            #tf.keras.layers.RandomTranslation(0.1, 0.1, fill_mode = f_mode),
            #tf.keras.layers.RandomZoom(0.1, fill_mode=f_mode)
            ])
        return augmentation_model

    def create_and_compile_model():
        augmentation_layers = augment_model()
        model = tf.keras.Sequential([
            # Note: the input shape is the desired size of the image: 150x150␣
↪with 3 bytes for color
            tf.keras.layers.InputLayer(shape = (img_size, img_size, 3)),
            augmentation_layers,
            tf.keras.layers.Rescaling(1./255),
            #####    CONV_LAYER_1:    #####
            tf.keras.layers.Conv2D(n_filters_l1, (4, 4), activation = 'linear'),
            tf.keras.layers.MaxPooling2D(2, 2),
            #####    CONV_LAYER_2:    #####
```

```python
        tf.keras.layers.Conv2D(n_filters_l2, (3, 3), activation = 'relu'),
        tf.keras.layers.MaxPooling2D(2, 2),
        #####    CONV_LAYER_3:     #####
        tf.keras.layers.Conv2D(64, (3, 3), activation = 'relu'),
        tf.keras.layers.MaxPooling2D(2, 2),
        #####    CONV_LAYER_4:     #####
        tf.keras.layers.Conv2D(64, (3, 3), activation = 'relu'),
        tf.keras.layers.MaxPooling2D(2, 2),
        tf.keras.layers.Flatten(),
        tf.keras.layers.Dropout(dropout_value),
        #####    BEFORE_LAST_LAYER:     #####
        tf.keras.layers.Dense(n_units_last_layer, activation = 'relu'),
        # It will contain a value from 0-1 where 0 for the class 'female'␣
↪and 1 for the 'male'
        tf.keras.layers.Dense(1, activation = 'sigmoid')])
    model.compile(
        loss = loss,
        optimizer = optimizer,
        metrics = metrics
    )
    return model

# Create the compiled but untrained model
def reset_weights(model):
    for layer in model.layers:
        if hasattr(layer, 'kernel_initializer'):
            layer.kernel.assign(layer.kernel_initializer(layer.kernel.
↪shape))
        if hasattr(layer, 'bias_initializer'):
            layer.bias.assign(layer.bias_initializer(layer.bias.shape))

model = create_and_compile_model()
reset_weights(model)  # Reset all layer weights
training_history = model.fit(training_dataset,
                            epochs=epochs,
                            validation_data=validation_dataset,
                            callbacks=[lr_callback],
                            verbose=2)
result_history = pd.DataFrame(model.history.history)
ACC = result_history['val_accuracy'].iloc[-1]
print(f"Current validation accuracy: {ACC}")
model.save('trained_model_run47_advanced_control.h5')
# Restart script
print("Reseting all weights...")
print(f'Current number of trials: {try_num}')
try_num += 1
result_history[['loss', 'val_loss']].plot(figsize=(5, 3))
```

```python
    result_history[['accuracy', 'val_accuracy']].plot(figsize=(5, 3))
    plt.show()
    print(model.metrics_names)
    print(model.evaluate(validation_dataset))
    y_true = np.concatenate([y.numpy() for _, y in validation_dataset])
    y_pred_prob = model.predict(validation_dataset)
    # Convert probabilities to class labels (0:Female or 1:Male)
    y_pred = (y_pred_prob > 0.5).astype(int).flatten()
    print("Classification Report:\n", classification_report(y_true, y_pred,
  ↪target_names=['Female', 'Male']))

result_history.head(15)
```

Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60

2025-05-06 08:03:14.939853: I tensorflow/core/framework/local_rendezvous.cc:405]
Local rendezvous is aborting with status: OUT_OF_RANGE: End of sequence

27/27 - 2s - 63ms/step - accuracy: 0.4982 - loss: 0.7768 - val_accuracy: 0.4362
- val_loss: 0.6974 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.5006 - loss: 0.6966 - val_accuracy: 0.5638
- val_loss: 0.6918 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.5442 - loss: 0.6901 - val_accuracy: 0.5532
- val_loss: 0.6898 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.4923 - loss: 0.6941 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.4912 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 10/60

```
27/27 - 1s - 37ms/step - accuracy: 0.5100 - loss: 0.6903 - val_accuracy: 0.4255
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.5336 - loss: 0.6841 - val_accuracy: 0.4787
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.5406 - loss: 0.6891 - val_accuracy: 0.5745
- val_loss: 0.6854 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.5053 - loss: 0.6994 - val_accuracy: 0.5638
- val_loss: 0.6840 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.5524 - loss: 0.6807 - val_accuracy: 0.5957
- val_loss: 0.7177 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.6196 - loss: 0.6420 - val_accuracy: 0.5745
- val_loss: 0.6859 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 38ms/step - accuracy: 0.5595 - loss: 0.6902 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6982 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6936 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.4664 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.4558 - loss: 0.6949 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6983 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6971 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.4923 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6939 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 26/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6966 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6943 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6973 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 38ms/step - accuracy: 0.4829 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6941 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 42/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6968 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6942 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6971 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 58/60
```
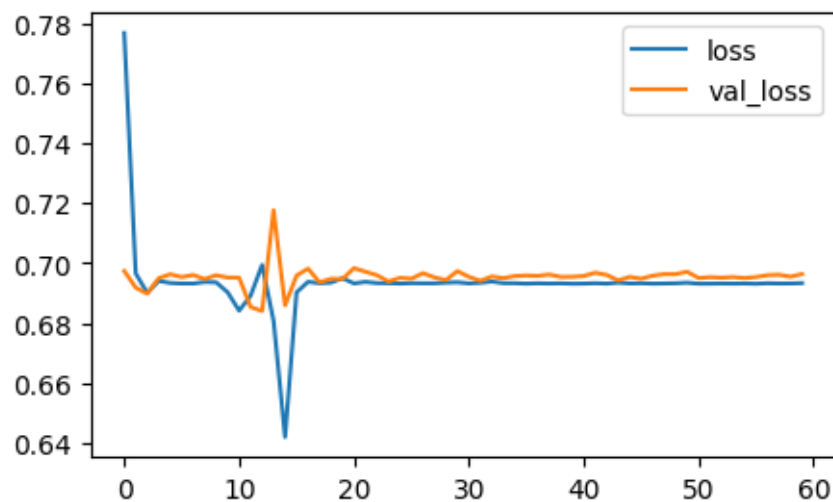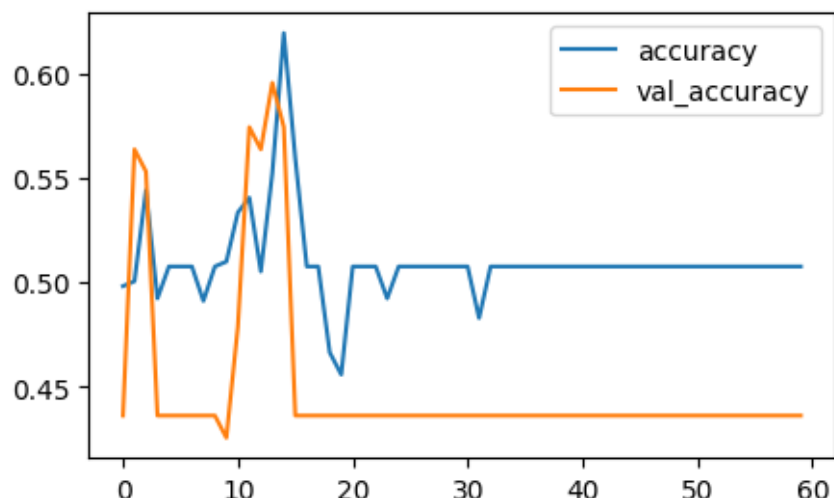
```
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
```

```
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.
```

```
Current validation accuracy: 0.43617022037506104
Reseting all weights…
Current number of trials: 1
```

```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.4603 - loss: 0.6952
[0.6963549852371216, 0.43617022037506104]
3/3              0s 22ms/step
```

2025-05-06 08:04:16.458462: I tensorflow/core/framework/local_rendezvous.cc:405]
Local rendezvous is aborting with status: OUT_OF_RANGE: End of sequence

```
Classification Report:
              precision    recall  f1-score   support

      Female       0.44      1.00      0.61        41
        Male       0.00      0.00      0.00        53

    accuracy                           0.44        94
   macro avg       0.22      0.50      0.30        94
weighted avg       0.19      0.44      0.26        94
```

```
Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
```

/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:

Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

Epoch 1/60
27/27 - 2s - 64ms/step - accuracy: 0.5442 - loss: 0.9729 - val_accuracy: 0.4894
- val_loss: 0.7447 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 40ms/step - accuracy: 0.6019 - loss: 0.6641 - val_accuracy: 0.4362
- val_loss: 0.7490 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.5724 - loss: 0.6912 - val_accuracy: 0.6277
- val_loss: 0.6659 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 38ms/step - accuracy: 0.6054 - loss: 0.6686 - val_accuracy: 0.6383
- val_loss: 0.6533 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 38ms/step - accuracy: 0.6549 - loss: 0.6334 - val_accuracy: 0.6702
- val_loss: 0.6529 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 38ms/step - accuracy: 0.6702 - loss: 0.6323 - val_accuracy: 0.6915
- val_loss: 0.5944 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 38ms/step - accuracy: 0.7244 - loss: 0.5940 - val_accuracy: 0.6702
- val_loss: 0.5814 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 38ms/step - accuracy: 0.7102 - loss: 0.5634 - val_accuracy: 0.7234
- val_loss: 0.5685 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 38ms/step - accuracy: 0.7303 - loss: 0.5547 - val_accuracy: 0.7021
- val_loss: 0.5730 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 38ms/step - accuracy: 0.7114 - loss: 0.5522 - val_accuracy: 0.7340
- val_loss: 0.5212 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 38ms/step - accuracy: 0.7444 - loss: 0.5193 - val_accuracy: 0.7021
- val_loss: 0.5675 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 38ms/step - accuracy: 0.7479 - loss: 0.5327 - val_accuracy: 0.7447
- val_loss: 0.5272 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 38ms/step - accuracy: 0.7597 - loss: 0.5129 - val_accuracy: 0.7128
- val_loss: 0.5380 - learning_rate: 0.0050

```
Epoch 14/60
27/27 - 1s - 38ms/step - accuracy: 0.7350 - loss: 0.5109 - val_accuracy: 0.7553
- val_loss: 0.6106 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 38ms/step - accuracy: 0.7314 - loss: 0.5143 - val_accuracy: 0.8085
- val_loss: 0.4981 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 38ms/step - accuracy: 0.7703 - loss: 0.4926 - val_accuracy: 0.7553
- val_loss: 0.5707 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 38ms/step - accuracy: 0.7880 - loss: 0.4589 - val_accuracy: 0.7660
- val_loss: 0.5640 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 38ms/step - accuracy: 0.7703 - loss: 0.4785 - val_accuracy: 0.8191
- val_loss: 0.5180 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 38ms/step - accuracy: 0.7868 - loss: 0.4750 - val_accuracy: 0.7766
- val_loss: 0.5171 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 38ms/step - accuracy: 0.7892 - loss: 0.4645 - val_accuracy: 0.7340
- val_loss: 0.5640 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 38ms/step - accuracy: 0.7550 - loss: 0.5056 - val_accuracy: 0.7872
- val_loss: 0.4913 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 38ms/step - accuracy: 0.7444 - loss: 0.5256 - val_accuracy: 0.7128
- val_loss: 0.5322 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 39ms/step - accuracy: 0.7515 - loss: 0.4898 - val_accuracy: 0.7979
- val_loss: 0.5170 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 39ms/step - accuracy: 0.7680 - loss: 0.4719 - val_accuracy: 0.7872
- val_loss: 0.5091 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 38ms/step - accuracy: 0.7739 - loss: 0.4707 - val_accuracy: 0.7872
- val_loss: 0.5602 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 38ms/step - accuracy: 0.7845 - loss: 0.4578 - val_accuracy: 0.7766
- val_loss: 0.5293 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 38ms/step - accuracy: 0.7880 - loss: 0.4405 - val_accuracy: 0.7979
- val_loss: 0.4880 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 38ms/step - accuracy: 0.8139 - loss: 0.4247 - val_accuracy: 0.7553
- val_loss: 0.5779 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 38ms/step - accuracy: 0.8021 - loss: 0.4196 - val_accuracy: 0.7447
- val_loss: 0.4640 - learning_rate: 0.0050
```

```
Epoch 30/60
27/27 - 1s - 38ms/step - accuracy: 0.7821 - loss: 0.4551 - val_accuracy: 0.7447
- val_loss: 0.5392 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 38ms/step - accuracy: 0.7797 - loss: 0.4454 - val_accuracy: 0.7447
- val_loss: 0.6212 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 38ms/step - accuracy: 0.8033 - loss: 0.4566 - val_accuracy: 0.7447
- val_loss: 0.5687 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 39ms/step - accuracy: 0.7715 - loss: 0.4577 - val_accuracy: 0.7340
- val_loss: 0.5417 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 39ms/step - accuracy: 0.8245 - loss: 0.4027 - val_accuracy: 0.8191
- val_loss: 0.5081 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 38ms/step - accuracy: 0.8139 - loss: 0.4337 - val_accuracy: 0.7553
- val_loss: 0.6211 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 38ms/step - accuracy: 0.8115 - loss: 0.4209 - val_accuracy: 0.8191
- val_loss: 0.5317 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 40ms/step - accuracy: 0.8115 - loss: 0.4160 - val_accuracy: 0.8085
- val_loss: 0.4650 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 38ms/step - accuracy: 0.8104 - loss: 0.4201 - val_accuracy: 0.8085
- val_loss: 0.4589 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.8304 - loss: 0.3754 - val_accuracy: 0.8085
- val_loss: 0.4775 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 38ms/step - accuracy: 0.8363 - loss: 0.4056 - val_accuracy: 0.7766
- val_loss: 0.4664 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 38ms/step - accuracy: 0.8269 - loss: 0.3961 - val_accuracy: 0.7979
- val_loss: 0.5054 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 38ms/step - accuracy: 0.8304 - loss: 0.3745 - val_accuracy: 0.7553
- val_loss: 0.6282 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 39ms/step - accuracy: 0.8045 - loss: 0.4288 - val_accuracy: 0.7660
- val_loss: 0.4904 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 39ms/step - accuracy: 0.8422 - loss: 0.3679 - val_accuracy: 0.8298
- val_loss: 0.4641 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 38ms/step - accuracy: 0.8327 - loss: 0.3509 - val_accuracy: 0.7872
- val_loss: 0.4657 - learning_rate: 0.0050
```

```
Epoch 46/60
27/27 - 1s - 38ms/step - accuracy: 0.8528 - loss: 0.3402 - val_accuracy: 0.7872
- val_loss: 0.4349 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 39ms/step - accuracy: 0.8410 - loss: 0.3721 - val_accuracy: 0.8298
- val_loss: 0.4115 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 39ms/step - accuracy: 0.8280 - loss: 0.3607 - val_accuracy: 0.8404
- val_loss: 0.4687 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 38ms/step - accuracy: 0.8551 - loss: 0.3500 - val_accuracy: 0.8511
- val_loss: 0.4093 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 38ms/step - accuracy: 0.8551 - loss: 0.3339 - val_accuracy: 0.8404
- val_loss: 0.4461 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 39ms/step - accuracy: 0.8481 - loss: 0.3405 - val_accuracy: 0.8617
- val_loss: 0.3692 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8504 - loss: 0.3335 - val_accuracy: 0.8404
- val_loss: 0.3331 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 38ms/step - accuracy: 0.8598 - loss: 0.3127 - val_accuracy: 0.8511
- val_loss: 0.3825 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 38ms/step - accuracy: 0.8693 - loss: 0.2984 - val_accuracy: 0.8085
- val_loss: 0.4815 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 38ms/step - accuracy: 0.8704 - loss: 0.3217 - val_accuracy: 0.8511
- val_loss: 0.4055 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 38ms/step - accuracy: 0.8681 - loss: 0.3186 - val_accuracy: 0.8404
- val_loss: 0.3971 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 39ms/step - accuracy: 0.8822 - loss: 0.3001 - val_accuracy: 0.8723
- val_loss: 0.4000 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 38ms/step - accuracy: 0.8834 - loss: 0.2898 - val_accuracy: 0.8617
- val_loss: 0.3903 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 38ms/step - accuracy: 0.8810 - loss: 0.2792 - val_accuracy: 0.8511
- val_loss: 0.4748 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 38ms/step - accuracy: 0.8068 - loss: 0.4784 - val_accuracy: 0.7553
- val_loss: 0.4821 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
```
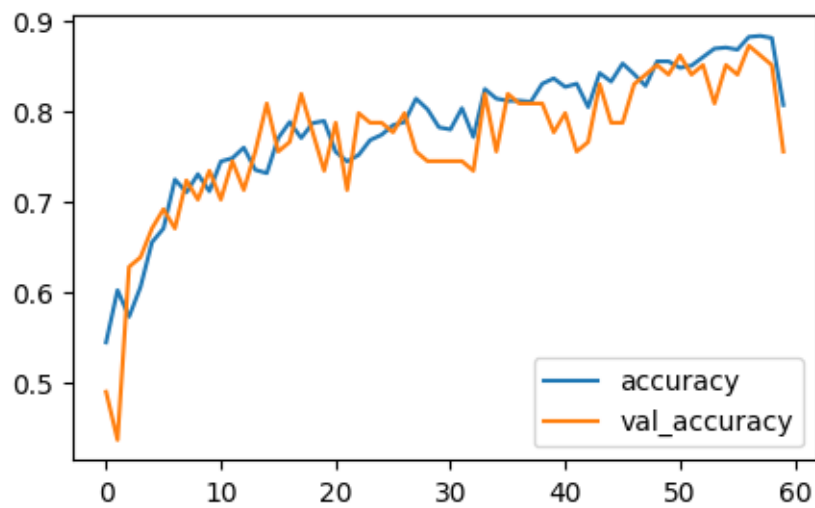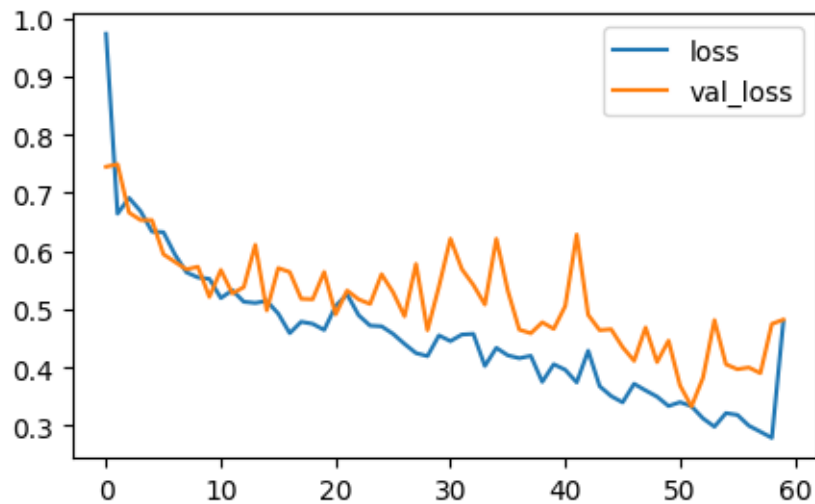
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.7553191781044006
Reseting all weights…
Current number of trials: 2


```
['loss', 'compile_metrics']
3/3              0s 11ms/step -
accuracy: 0.7331 - loss: 0.4839
[0.48214957118034363, 0.7553191781044006]
3/3              0s 22ms/step
```

```
Classification Report:
              precision    recall  f1-score   support

      Female       0.69      0.80      0.74        41
        Male       0.83      0.72      0.77        53

    accuracy                           0.76        94
   macro avg       0.76      0.76      0.75        94
weighted avg       0.77      0.76      0.76        94


Found 943 files belonging to 2 classes.
Using 849 files for training.

2025-05-06 08:05:19.744041: I tensorflow/core/framework/local_rendezvous.cc:405]
Local rendezvous is aborting with status: OUT_OF_RANGE: End of sequence

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 62ms/step - accuracy: 0.5041 - loss: 0.8428 - val_accuracy: 0.4574
- val_loss: 0.6991 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 39ms/step - accuracy: 0.6078 - loss: 0.6654 - val_accuracy: 0.6383
- val_loss: 0.6407 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 40ms/step - accuracy: 0.6078 - loss: 0.6492 - val_accuracy: 0.5319
- val_loss: 0.7020 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 38ms/step - accuracy: 0.6490 - loss: 0.6322 - val_accuracy: 0.6702
- val_loss: 0.5961 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 38ms/step - accuracy: 0.6926 - loss: 0.6059 - val_accuracy: 0.7447
- val_loss: 0.5724 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 39ms/step - accuracy: 0.6926 - loss: 0.5729 - val_accuracy: 0.7340
- val_loss: 0.5405 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 38ms/step - accuracy: 0.6761 - loss: 0.6033 - val_accuracy: 0.7021
- val_loss: 0.5376 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 38ms/step - accuracy: 0.7138 - loss: 0.5598 - val_accuracy: 0.7447
- val_loss: 0.5118 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 39ms/step - accuracy: 0.7161 - loss: 0.5595 - val_accuracy: 0.7660
- val_loss: 0.4638 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 38ms/step - accuracy: 0.7503 - loss: 0.5332 - val_accuracy: 0.7553
- val_loss: 0.4985 - learning_rate: 0.0050
Epoch 11/60
```

```
27/27 - 1s - 38ms/step - accuracy: 0.7491 - loss: 0.5081 - val_accuracy: 0.7979
- val_loss: 0.4220 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 38ms/step - accuracy: 0.7633 - loss: 0.5028 - val_accuracy: 0.7234
- val_loss: 0.6000 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 39ms/step - accuracy: 0.7691 - loss: 0.4959 - val_accuracy: 0.7447
- val_loss: 0.4909 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 38ms/step - accuracy: 0.7715 - loss: 0.4974 - val_accuracy: 0.7553
- val_loss: 0.4973 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 39ms/step - accuracy: 0.7644 - loss: 0.4937 - val_accuracy: 0.7021
- val_loss: 0.5908 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 39ms/step - accuracy: 0.7856 - loss: 0.4653 - val_accuracy: 0.7766
- val_loss: 0.4939 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 38ms/step - accuracy: 0.7939 - loss: 0.4546 - val_accuracy: 0.7660
- val_loss: 0.4475 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 39ms/step - accuracy: 0.7821 - loss: 0.4785 - val_accuracy: 0.7872
- val_loss: 0.4847 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 39ms/step - accuracy: 0.7868 - loss: 0.4561 - val_accuracy: 0.7979
- val_loss: 0.4621 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 38ms/step - accuracy: 0.7821 - loss: 0.4551 - val_accuracy: 0.8085
- val_loss: 0.4812 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 39ms/step - accuracy: 0.7927 - loss: 0.4621 - val_accuracy: 0.7979
- val_loss: 0.5296 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 39ms/step - accuracy: 0.7880 - loss: 0.4654 - val_accuracy: 0.8191
- val_loss: 0.3980 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 39ms/step - accuracy: 0.7762 - loss: 0.4641 - val_accuracy: 0.8085
- val_loss: 0.4830 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 39ms/step - accuracy: 0.8127 - loss: 0.4235 - val_accuracy: 0.8191
- val_loss: 0.4309 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 39ms/step - accuracy: 0.8092 - loss: 0.4347 - val_accuracy: 0.8191
- val_loss: 0.4042 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 39ms/step - accuracy: 0.7762 - loss: 0.4785 - val_accuracy: 0.7872
- val_loss: 0.4341 - learning_rate: 0.0050
Epoch 27/60
```

```
27/27 - 1s - 39ms/step - accuracy: 0.8021 - loss: 0.4418 - val_accuracy: 0.7766
- val_loss: 0.4705 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 39ms/step - accuracy: 0.8304 - loss: 0.4079 - val_accuracy: 0.8191
- val_loss: 0.4169 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 39ms/step - accuracy: 0.8151 - loss: 0.4094 - val_accuracy: 0.8191
- val_loss: 0.4498 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 39ms/step - accuracy: 0.8198 - loss: 0.4209 - val_accuracy: 0.8191
- val_loss: 0.3857 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 38ms/step - accuracy: 0.8210 - loss: 0.4031 - val_accuracy: 0.8191
- val_loss: 0.3698 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.7986 - loss: 0.4122 - val_accuracy: 0.8191
- val_loss: 0.3973 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 38ms/step - accuracy: 0.8257 - loss: 0.3761 - val_accuracy: 0.8511
- val_loss: 0.3738 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 39ms/step - accuracy: 0.8587 - loss: 0.3574 - val_accuracy: 0.8191
- val_loss: 0.3485 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 38ms/step - accuracy: 0.8363 - loss: 0.3690 - val_accuracy: 0.8511
- val_loss: 0.3588 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 38ms/step - accuracy: 0.8198 - loss: 0.3846 - val_accuracy: 0.8830
- val_loss: 0.3502 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 38ms/step - accuracy: 0.8481 - loss: 0.3591 - val_accuracy: 0.7979
- val_loss: 0.4109 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.7397 - loss: 0.5262 - val_accuracy: 0.6915
- val_loss: 0.5547 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.7927 - loss: 0.4297 - val_accuracy: 0.8085
- val_loss: 0.4843 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.7903 - loss: 0.4429 - val_accuracy: 0.7979
- val_loss: 0.4417 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 38ms/step - accuracy: 0.8057 - loss: 0.4188 - val_accuracy: 0.7660
- val_loss: 0.4753 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 38ms/step - accuracy: 0.8233 - loss: 0.3837 - val_accuracy: 0.7872
- val_loss: 0.4866 - learning_rate: 0.0050
Epoch 43/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.8080 - loss: 0.4363 - val_accuracy: 0.8511
- val_loss: 0.3302 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 38ms/step - accuracy: 0.8186 - loss: 0.3699 - val_accuracy: 0.8085
- val_loss: 0.4009 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8410 - loss: 0.3792 - val_accuracy: 0.7872
- val_loss: 0.4212 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8587 - loss: 0.3307 - val_accuracy: 0.7872
- val_loss: 0.4806 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8481 - loss: 0.3350 - val_accuracy: 0.7979
- val_loss: 0.3792 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8622 - loss: 0.3242 - val_accuracy: 0.8298
- val_loss: 0.3226 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 38ms/step - accuracy: 0.8457 - loss: 0.3571 - val_accuracy: 0.8404
- val_loss: 0.3476 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8351 - loss: 0.3844 - val_accuracy: 0.8298
- val_loss: 0.4608 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.8528 - loss: 0.3429 - val_accuracy: 0.7979
- val_loss: 0.4199 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 38ms/step - accuracy: 0.8504 - loss: 0.3411 - val_accuracy: 0.8298
- val_loss: 0.3691 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8422 - loss: 0.3714 - val_accuracy: 0.8723
- val_loss: 0.3418 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8504 - loss: 0.3511 - val_accuracy: 0.8191
- val_loss: 0.4514 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8610 - loss: 0.3392 - val_accuracy: 0.7979
- val_loss: 0.3937 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8634 - loss: 0.3216 - val_accuracy: 0.8191
- val_loss: 0.4344 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8610 - loss: 0.3083 - val_accuracy: 0.8191
- val_loss: 0.4994 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8551 - loss: 0.3259 - val_accuracy: 0.8085
- val_loss: 0.4039 - learning_rate: 0.0050
Epoch 59/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.8775 - loss: 0.3220 - val_accuracy: 0.8085
- val_loss: 0.3812 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8657 - loss: 0.3163 - val_accuracy: 0.8191
- val_loss: 0.4391 - learning_rate: 0.0050
```

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.save('my_model.keras')` or `keras.saving.save_model(model, 'my_model.keras')`.

```
Current validation accuracy: 0.8191489577293396
Reseting all weights…
Current number of trials: 3
```
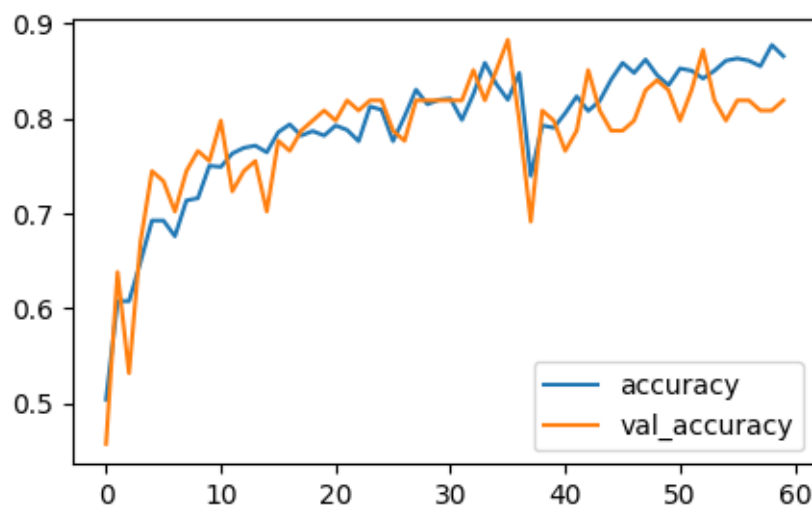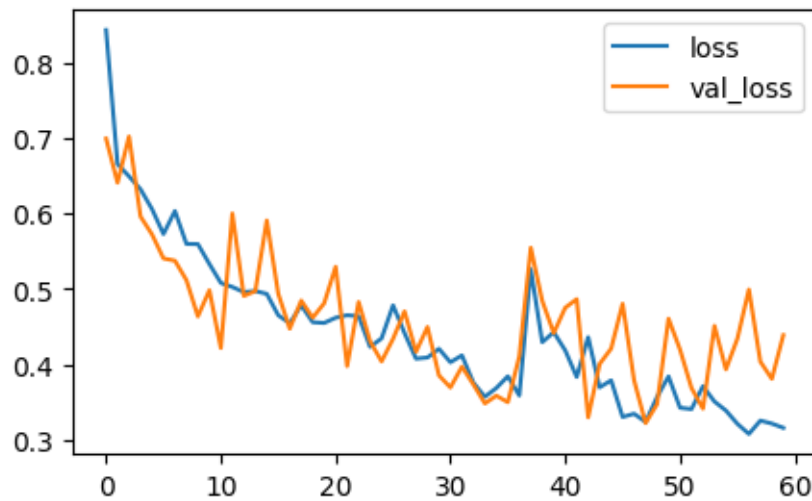
```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.8080 - loss: 0.4761
[0.4390597343444824, 0.8191489577293396]
WARNING:tensorflow:5 out of the last 7 calls to <function
TensorFlowTrainer.make_predict_function.<locals>.one_step_on_data_distributed at
0x173774d60> triggered tf.function retracing. Tracing is expensive and the
excessive number of tracings could be due to (1) creating @tf.function
repeatedly in a loop, (2) passing tensors with different shapes, (3) passing
Python objects instead of tensors. For (1), please define your @tf.function
outside of the loop. For (2), @tf.function has reduce_retracing=True option that
can avoid unnecessary retracing. For (3), please refer to
https://www.tensorflow.org/guide/function#controlling_retracing and
https://www.tensorflow.org/api_docs/python/tf/function for  more details.

WARNING:tensorflow:5 out of the last 7 calls to <function
TensorFlowTrainer.make_predict_function.<locals>.one_step_on_data_distributed at
0x173774d60> triggered tf.function retracing. Tracing is expensive and the
excessive number of tracings could be due to (1) creating @tf.function
repeatedly in a loop, (2) passing tensors with different shapes, (3) passing
Python objects instead of tensors. For (1), please define your @tf.function
outside of the loop. For (2), @tf.function has reduce_retracing=True option that
can avoid unnecessary retracing. For (3), please refer to
https://www.tensorflow.org/guide/function#controlling_retracing and
https://www.tensorflow.org/api_docs/python/tf/function for  more details.

1/3              0s
33ms/stepWARNING:tensorflow:6 out of the last 9 calls to <function
TensorFlowTrainer.make_predict_function.<locals>.one_step_on_data_distributed at
0x173774d60> triggered tf.function retracing. Tracing is expensive and the
excessive number of tracings could be due to (1) creating @tf.function
repeatedly in a loop, (2) passing tensors with different shapes, (3) passing
Python objects instead of tensors. For (1), please define your @tf.function
outside of the loop. For (2), @tf.function has reduce_retracing=True option that
can avoid unnecessary retracing. For (3), please refer to
https://www.tensorflow.org/guide/function#controlling_retracing and
https://www.tensorflow.org/api_docs/python/tf/function for  more details.

WARNING:tensorflow:6 out of the last 9 calls to <function
TensorFlowTrainer.make_predict_function.<locals>.one_step_on_data_distributed at
0x173774d60> triggered tf.function retracing. Tracing is expensive and the
excessive number of tracings could be due to (1) creating @tf.function
repeatedly in a loop, (2) passing tensors with different shapes, (3) passing
Python objects instead of tensors. For (1), please define your @tf.function
outside of the loop. For (2), @tf.function has reduce_retracing=True option that
can avoid unnecessary retracing. For (3), please refer to
https://www.tensorflow.org/guide/function#controlling_retracing and
```

https://www.tensorflow.org/api_docs/python/tf/function for more details.

```
3/3              0s 22ms/step
Classification Report:
              precision    recall   f1-score    support

      Female       0.80      0.78       0.79         41
        Male       0.83      0.85       0.84         53

    accuracy                            0.82         94
   macro avg       0.82      0.81       0.82         94
weighted avg       0.82      0.82       0.82         94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5171 - loss: 0.9282 - val_accuracy: 0.5638
- val_loss: 0.6804 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.5795 - loss: 0.6712 - val_accuracy: 0.6702
- val_loss: 0.6284 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.6549 - loss: 0.6249 - val_accuracy: 0.7234
- val_loss: 0.6291 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 40ms/step - accuracy: 0.6490 - loss: 0.6400 - val_accuracy: 0.6702
- val_loss: 0.6318 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 38ms/step - accuracy: 0.6926 - loss: 0.6082 - val_accuracy: 0.6277
- val_loss: 0.6616 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 38ms/step - accuracy: 0.6678 - loss: 0.6074 - val_accuracy: 0.7234
- val_loss: 0.5638 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.6631 - loss: 0.6027 - val_accuracy: 0.5106
- val_loss: 0.7195 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 38ms/step - accuracy: 0.6514 - loss: 0.6175 - val_accuracy: 0.6489
- val_loss: 0.5538 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 38ms/step - accuracy: 0.6820 - loss: 0.6044 - val_accuracy: 0.6809
- val_loss: 0.5481 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 38ms/step - accuracy: 0.6890 - loss: 0.5937 - val_accuracy: 0.7021
- val_loss: 0.6008 - learning_rate: 0.0050
Epoch 11/60
```

```
27/27 - 1s - 38ms/step - accuracy: 0.6608 - loss: 0.6117 - val_accuracy: 0.6489
- val_loss: 0.6129 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 38ms/step - accuracy: 0.6749 - loss: 0.5984 - val_accuracy: 0.7128
- val_loss: 0.5645 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 38ms/step - accuracy: 0.7244 - loss: 0.5760 - val_accuracy: 0.7340
- val_loss: 0.5285 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 38ms/step - accuracy: 0.7456 - loss: 0.5467 - val_accuracy: 0.7021
- val_loss: 0.5768 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 38ms/step - accuracy: 0.7208 - loss: 0.5444 - val_accuracy: 0.7128
- val_loss: 0.5474 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 38ms/step - accuracy: 0.7138 - loss: 0.5565 - val_accuracy: 0.7340
- val_loss: 0.5785 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 38ms/step - accuracy: 0.7326 - loss: 0.5214 - val_accuracy: 0.6915
- val_loss: 0.6145 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 38ms/step - accuracy: 0.7102 - loss: 0.5698 - val_accuracy: 0.7128
- val_loss: 0.5685 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 39ms/step - accuracy: 0.7550 - loss: 0.5057 - val_accuracy: 0.7234
- val_loss: 0.5536 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 39ms/step - accuracy: 0.7232 - loss: 0.5525 - val_accuracy: 0.6702
- val_loss: 0.5862 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 38ms/step - accuracy: 0.7409 - loss: 0.5263 - val_accuracy: 0.7447
- val_loss: 0.5695 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 38ms/step - accuracy: 0.7126 - loss: 0.5626 - val_accuracy: 0.7128
- val_loss: 0.5711 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 38ms/step - accuracy: 0.7303 - loss: 0.5376 - val_accuracy: 0.6915
- val_loss: 0.5524 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 38ms/step - accuracy: 0.7479 - loss: 0.5080 - val_accuracy: 0.7447
- val_loss: 0.5275 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 38ms/step - accuracy: 0.7279 - loss: 0.5334 - val_accuracy: 0.7234
- val_loss: 0.5649 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 38ms/step - accuracy: 0.7291 - loss: 0.5529 - val_accuracy: 0.7021
- val_loss: 0.5558 - learning_rate: 0.0050
Epoch 27/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.7432 - loss: 0.5282 - val_accuracy: 0.6915
- val_loss: 0.5795 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 38ms/step - accuracy: 0.7303 - loss: 0.5184 - val_accuracy: 0.7553
- val_loss: 0.4924 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 38ms/step - accuracy: 0.7609 - loss: 0.4988 - val_accuracy: 0.7660
- val_loss: 0.5725 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 38ms/step - accuracy: 0.7585 - loss: 0.5320 - val_accuracy: 0.7660
- val_loss: 0.5238 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 38ms/step - accuracy: 0.7091 - loss: 0.5525 - val_accuracy: 0.7979
- val_loss: 0.4758 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 38ms/step - accuracy: 0.7550 - loss: 0.5094 - val_accuracy: 0.7660
- val_loss: 0.5076 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 38ms/step - accuracy: 0.7456 - loss: 0.4924 - val_accuracy: 0.8191
- val_loss: 0.4417 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 38ms/step - accuracy: 0.7668 - loss: 0.4821 - val_accuracy: 0.7660
- val_loss: 0.5433 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 39ms/step - accuracy: 0.7479 - loss: 0.4983 - val_accuracy: 0.7872
- val_loss: 0.4493 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 38ms/step - accuracy: 0.7397 - loss: 0.5271 - val_accuracy: 0.7447
- val_loss: 0.5895 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 38ms/step - accuracy: 0.7432 - loss: 0.5044 - val_accuracy: 0.8085
- val_loss: 0.4443 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 38ms/step - accuracy: 0.7633 - loss: 0.4997 - val_accuracy: 0.7553
- val_loss: 0.4830 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.7633 - loss: 0.4662 - val_accuracy: 0.7234
- val_loss: 0.5440 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 38ms/step - accuracy: 0.7597 - loss: 0.5042 - val_accuracy: 0.8298
- val_loss: 0.4230 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 38ms/step - accuracy: 0.7585 - loss: 0.4904 - val_accuracy: 0.7766
- val_loss: 0.4858 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 38ms/step - accuracy: 0.7786 - loss: 0.4540 - val_accuracy: 0.7979
- val_loss: 0.4599 - learning_rate: 0.0050
Epoch 43/60
```

```
27/27 - 1s - 38ms/step - accuracy: 0.7786 - loss: 0.4746 - val_accuracy: 0.8085
- val_loss: 0.5231 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 38ms/step - accuracy: 0.7821 - loss: 0.4770 - val_accuracy: 0.7766
- val_loss: 0.5041 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 38ms/step - accuracy: 0.7680 - loss: 0.4642 - val_accuracy: 0.7340
- val_loss: 0.4749 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 38ms/step - accuracy: 0.7845 - loss: 0.4591 - val_accuracy: 0.8085
- val_loss: 0.4048 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 38ms/step - accuracy: 0.7880 - loss: 0.4434 - val_accuracy: 0.7660
- val_loss: 0.5857 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 38ms/step - accuracy: 0.7927 - loss: 0.4387 - val_accuracy: 0.7553
- val_loss: 0.4822 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 38ms/step - accuracy: 0.7821 - loss: 0.4745 - val_accuracy: 0.7660
- val_loss: 0.4877 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 39ms/step - accuracy: 0.7986 - loss: 0.4348 - val_accuracy: 0.7234
- val_loss: 0.4549 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 40ms/step - accuracy: 0.7821 - loss: 0.4539 - val_accuracy: 0.7872
- val_loss: 0.4390 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 39ms/step - accuracy: 0.7892 - loss: 0.4660 - val_accuracy: 0.7660
- val_loss: 0.4184 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 38ms/step - accuracy: 0.8198 - loss: 0.4055 - val_accuracy: 0.7340
- val_loss: 0.4822 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 38ms/step - accuracy: 0.7691 - loss: 0.4580 - val_accuracy: 0.7234
- val_loss: 0.5743 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 38ms/step - accuracy: 0.7927 - loss: 0.4299 - val_accuracy: 0.7766
- val_loss: 0.4815 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 38ms/step - accuracy: 0.7456 - loss: 0.5166 - val_accuracy: 0.7553
- val_loss: 0.6054 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 38ms/step - accuracy: 0.7727 - loss: 0.4796 - val_accuracy: 0.7766
- val_loss: 0.5276 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 38ms/step - accuracy: 0.7644 - loss: 0.4368 - val_accuracy: 0.7553
- val_loss: 0.4815 - learning_rate: 0.0050
Epoch 59/60
```

```
27/27 - 1s - 39ms/step - accuracy: 0.7951 - loss: 0.4417 - val_accuracy: 0.7766
- val_loss: 0.4346 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 38ms/step - accuracy: 0.7974 - loss: 0.4263 - val_accuracy: 0.7553
- val_loss: 0.4490 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.7553191781044006
Reseting all weights…
Current number of trials: 4
```
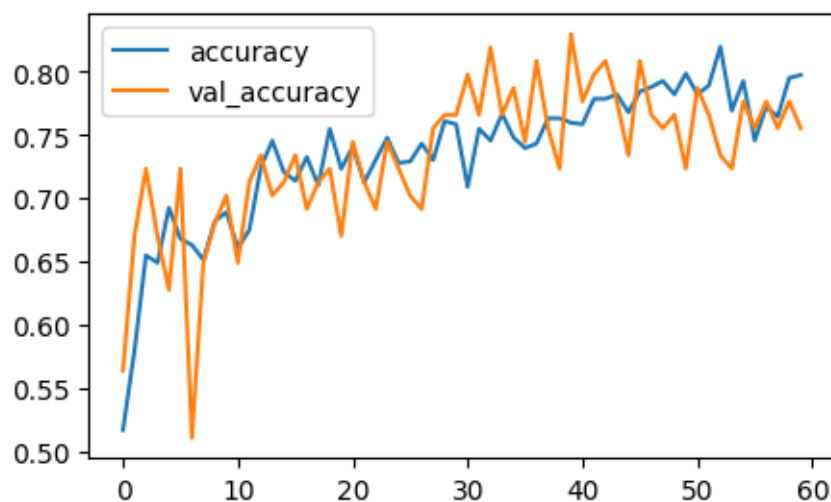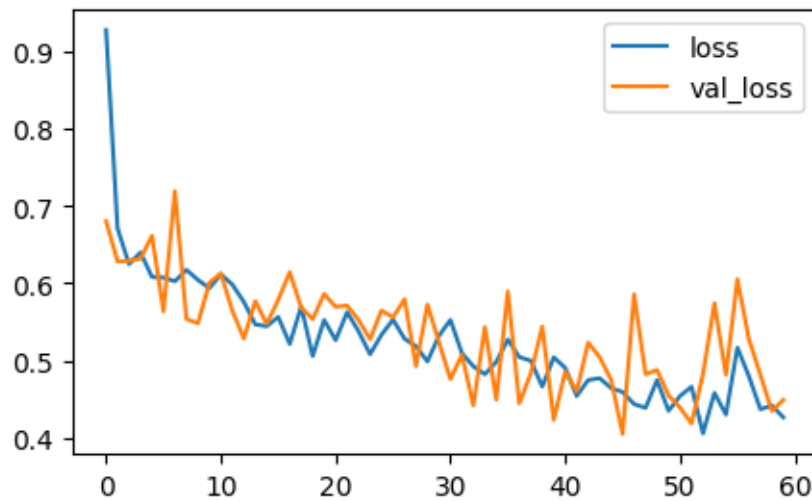
```
['loss', 'compile_metrics']
3/3              0s 11ms/step -
accuracy: 0.7488 - loss: 0.4739
[0.4489637315273285, 0.7553191781044006]
3/3              0s 23ms/step
Classification Report:
              precision    recall   f1-score    support

      Female        0.70      0.78       0.74         41
        Male        0.81      0.74       0.77         53

    accuracy                             0.76         94
   macro avg        0.75      0.76       0.75         94
weighted avg        0.76      0.76       0.76         94


2025-05-06 08:07:25.375355: I tensorflow/core/framework/local_rendezvous.cc:405]
Local rendezvous is aborting with status: OUT_OF_RANGE: End of sequence

Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 65ms/step - accuracy: 0.5359 - loss: 1.0149 - val_accuracy: 0.6277
- val_loss: 0.6515 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 39ms/step - accuracy: 0.6066 - loss: 0.6585 - val_accuracy: 0.4468
- val_loss: 0.7111 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.5925 - loss: 0.6392 - val_accuracy: 0.6489
- val_loss: 0.8998 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 38ms/step - accuracy: 0.6749 - loss: 0.6215 - val_accuracy: 0.6596
- val_loss: 0.6402 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 39ms/step - accuracy: 0.6808 - loss: 0.6017 - val_accuracy: 0.7021
- val_loss: 0.6123 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 38ms/step - accuracy: 0.7256 - loss: 0.5549 - val_accuracy: 0.7660
- val_loss: 0.5213 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 38ms/step - accuracy: 0.7185 - loss: 0.5561 - val_accuracy: 0.7340
- val_loss: 0.5745 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 38ms/step - accuracy: 0.7444 - loss: 0.5232 - val_accuracy: 0.7340
```

```
- val_loss: 0.5234 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 38ms/step - accuracy: 0.7515 - loss: 0.5230 - val_accuracy: 0.7766
- val_loss: 0.5162 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 39ms/step - accuracy: 0.7597 - loss: 0.5129 - val_accuracy: 0.7766
- val_loss: 0.5315 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 38ms/step - accuracy: 0.7338 - loss: 0.5141 - val_accuracy: 0.7447
- val_loss: 0.4975 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 38ms/step - accuracy: 0.7609 - loss: 0.4893 - val_accuracy: 0.7340
- val_loss: 0.5427 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 38ms/step - accuracy: 0.7821 - loss: 0.4632 - val_accuracy: 0.7872
- val_loss: 0.5282 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 38ms/step - accuracy: 0.7479 - loss: 0.5187 - val_accuracy: 0.7660
- val_loss: 0.4819 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 38ms/step - accuracy: 0.7691 - loss: 0.4984 - val_accuracy: 0.7340
- val_loss: 0.5407 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7609 - loss: 0.4893 - val_accuracy: 0.7340
- val_loss: 0.5177 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 38ms/step - accuracy: 0.7574 - loss: 0.5088 - val_accuracy: 0.7553
- val_loss: 0.4696 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7574 - loss: 0.4932 - val_accuracy: 0.7979
- val_loss: 0.4674 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 38ms/step - accuracy: 0.7715 - loss: 0.4665 - val_accuracy: 0.6489
- val_loss: 0.6735 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 38ms/step - accuracy: 0.7703 - loss: 0.4822 - val_accuracy: 0.7660
- val_loss: 0.5140 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 38ms/step - accuracy: 0.7668 - loss: 0.4944 - val_accuracy: 0.7553
- val_loss: 0.5257 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 38ms/step - accuracy: 0.7892 - loss: 0.4600 - val_accuracy: 0.7553
- val_loss: 0.5727 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 38ms/step - accuracy: 0.7715 - loss: 0.4768 - val_accuracy: 0.7553
- val_loss: 0.4372 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 38ms/step - accuracy: 0.7739 - loss: 0.4647 - val_accuracy: 0.7553
```

```
- val_loss: 0.4885 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 38ms/step - accuracy: 0.7774 - loss: 0.4646 - val_accuracy: 0.7872
- val_loss: 0.4879 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.8057 - loss: 0.4339 - val_accuracy: 0.7766
- val_loss: 0.5687 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 38ms/step - accuracy: 0.8021 - loss: 0.4408 - val_accuracy: 0.8298
- val_loss: 0.4276 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 38ms/step - accuracy: 0.7939 - loss: 0.4310 - val_accuracy: 0.8404
- val_loss: 0.3834 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 38ms/step - accuracy: 0.7845 - loss: 0.4349 - val_accuracy: 0.8085
- val_loss: 0.4341 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 38ms/step - accuracy: 0.7880 - loss: 0.4544 - val_accuracy: 0.7447
- val_loss: 0.4899 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 38ms/step - accuracy: 0.7609 - loss: 0.4924 - val_accuracy: 0.7553
- val_loss: 0.4550 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.7774 - loss: 0.4768 - val_accuracy: 0.7979
- val_loss: 0.5010 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 38ms/step - accuracy: 0.7998 - loss: 0.4430 - val_accuracy: 0.7872
- val_loss: 0.5200 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 38ms/step - accuracy: 0.7951 - loss: 0.4222 - val_accuracy: 0.7660
- val_loss: 0.5155 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 38ms/step - accuracy: 0.8174 - loss: 0.4113 - val_accuracy: 0.8723
- val_loss: 0.3832 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 40ms/step - accuracy: 0.8174 - loss: 0.4060 - val_accuracy: 0.7234
- val_loss: 0.5361 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 38ms/step - accuracy: 0.8139 - loss: 0.4015 - val_accuracy: 0.8298
- val_loss: 0.3875 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 38ms/step - accuracy: 0.8186 - loss: 0.4009 - val_accuracy: 0.7979
- val_loss: 0.4498 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.8339 - loss: 0.3921 - val_accuracy: 0.8191
- val_loss: 0.4198 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 38ms/step - accuracy: 0.8269 - loss: 0.3808 - val_accuracy: 0.7553
```

```
- val_loss: 0.4422 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 38ms/step - accuracy: 0.8045 - loss: 0.4083 - val_accuracy: 0.8404
- val_loss: 0.3651 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 39ms/step - accuracy: 0.8386 - loss: 0.3834 - val_accuracy: 0.8191
- val_loss: 0.3538 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 39ms/step - accuracy: 0.8115 - loss: 0.4121 - val_accuracy: 0.7553
- val_loss: 0.5368 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 39ms/step - accuracy: 0.8469 - loss: 0.3936 - val_accuracy: 0.7872
- val_loss: 0.6679 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 39ms/step - accuracy: 0.8292 - loss: 0.4134 - val_accuracy: 0.8404
- val_loss: 0.3619 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 39ms/step - accuracy: 0.8398 - loss: 0.3702 - val_accuracy: 0.8404
- val_loss: 0.3257 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 38ms/step - accuracy: 0.8221 - loss: 0.4180 - val_accuracy: 0.7979
- val_loss: 0.4040 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 40ms/step - accuracy: 0.8398 - loss: 0.3696 - val_accuracy: 0.8298
- val_loss: 0.3932 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 38ms/step - accuracy: 0.8363 - loss: 0.3617 - val_accuracy: 0.8191
- val_loss: 0.3931 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 39ms/step - accuracy: 0.8457 - loss: 0.3707 - val_accuracy: 0.8723
- val_loss: 0.3692 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 39ms/step - accuracy: 0.8174 - loss: 0.3975 - val_accuracy: 0.8298
- val_loss: 0.4143 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 39ms/step - accuracy: 0.8504 - loss: 0.3664 - val_accuracy: 0.8298
- val_loss: 0.3091 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 39ms/step - accuracy: 0.8563 - loss: 0.3231 - val_accuracy: 0.7447
- val_loss: 0.6437 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 40ms/step - accuracy: 0.8186 - loss: 0.3961 - val_accuracy: 0.8298
- val_loss: 0.3996 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 39ms/step - accuracy: 0.8433 - loss: 0.3400 - val_accuracy: 0.8191
- val_loss: 0.3943 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 39ms/step - accuracy: 0.8339 - loss: 0.3482 - val_accuracy: 0.7979
```

```
- val_loss: 0.5681 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 40ms/step - accuracy: 0.8492 - loss: 0.3559 - val_accuracy: 0.8191
- val_loss: 0.5001 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 40ms/step - accuracy: 0.8528 - loss: 0.3204 - val_accuracy: 0.8404
- val_loss: 0.3979 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 39ms/step - accuracy: 0.8292 - loss: 0.3578 - val_accuracy: 0.8085
- val_loss: 0.3790 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 38ms/step - accuracy: 0.8751 - loss: 0.2937 - val_accuracy: 0.8511
- val_loss: 0.4892 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.8510638475418091
Reseting all weights…
Current number of trials: 5
```
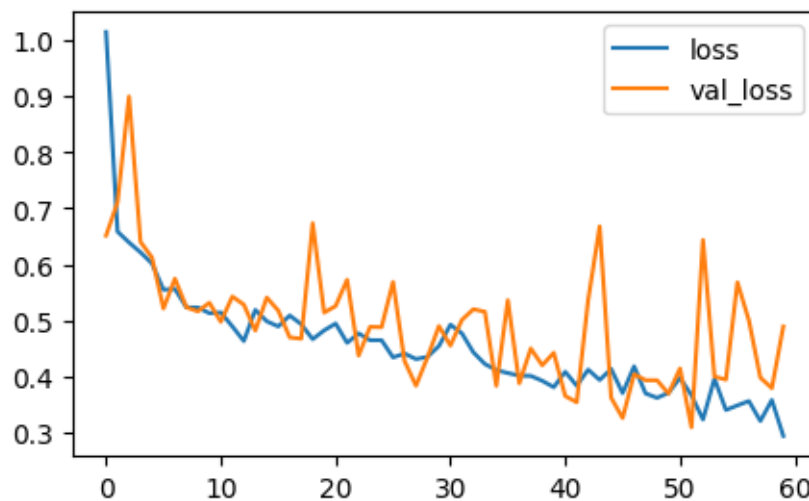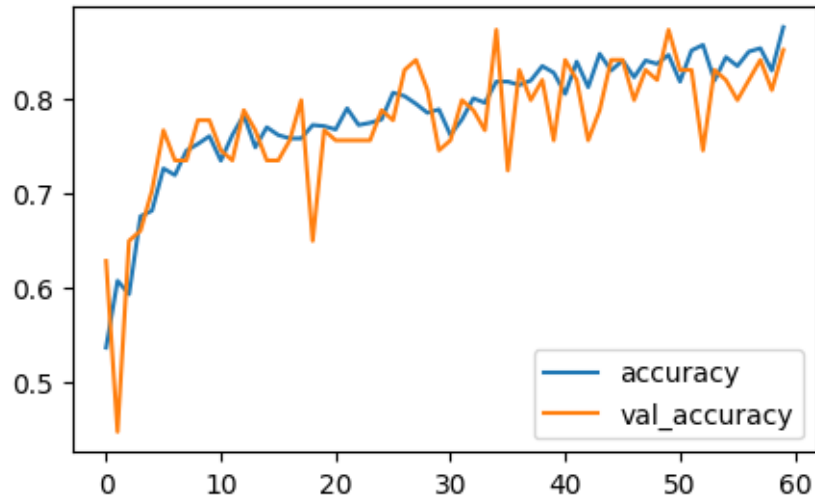
```
['loss', 'compile_metrics']
3/3                0s 10ms/step -
accuracy: 0.8357 - loss: 0.5150
[0.48915547132492065, 0.8510638475418091]
3/3                0s 21ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.79      0.90      0.84        41
        Male       0.91      0.81      0.86        53

    accuracy                           0.85        94
   macro avg       0.85      0.86      0.85        94
weighted avg       0.86      0.85      0.85        94

Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 62ms/step - accuracy: 0.5171 - loss: 0.9672 - val_accuracy: 0.5638
- val_loss: 0.6874 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 39ms/step - accuracy: 0.5571 - loss: 0.6858 - val_accuracy: 0.5532
- val_loss: 0.6636 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 40ms/step - accuracy: 0.6019 - loss: 0.6565 - val_accuracy: 0.5957
- val_loss: 0.6655 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 39ms/step - accuracy: 0.5442 - loss: 0.6966 - val_accuracy: 0.4362
```

```
- val_loss: 0.7063 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6941 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6968 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6967 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6970 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6971 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
```

```
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6972 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 41ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
```

```
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
```
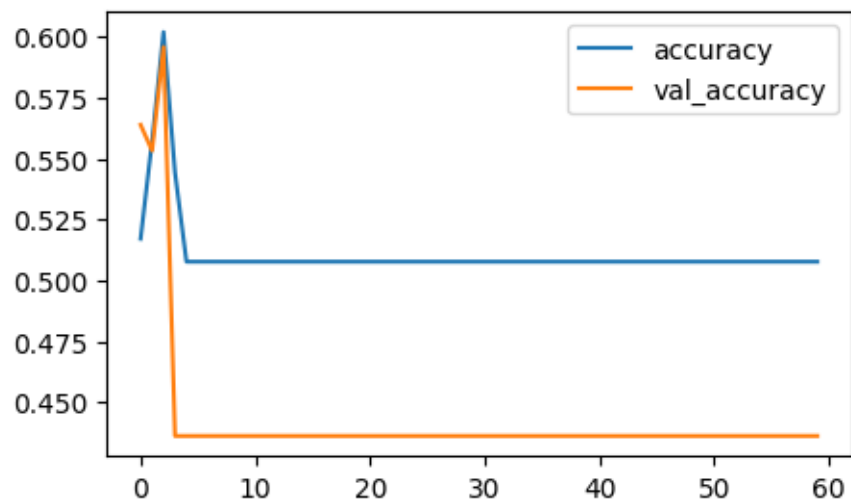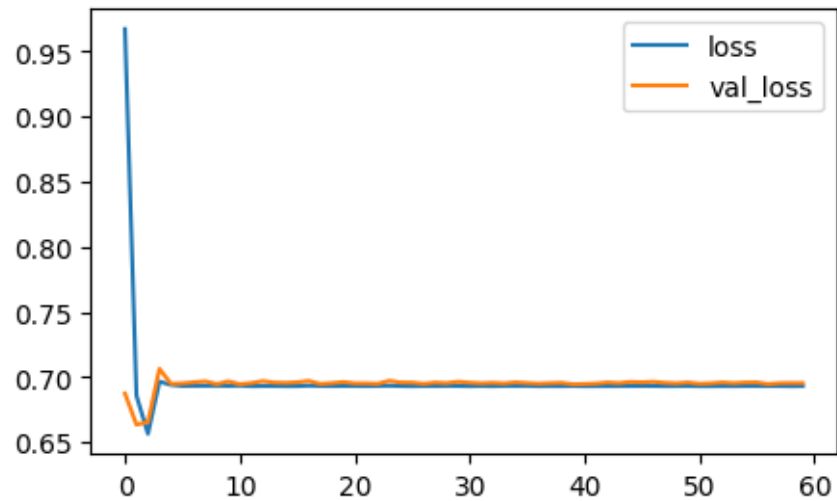
```
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.43617022037506104
Reseting all weights…
Current number of trials: 6
```

```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.4603 - loss: 0.6946
[0.6954304575920105, 0.43617022037506104]
3/3              0s 21ms/step
Classification Report:
             precision    recall   f1-score    support

     Female       0.44      1.00       0.61         41
       Male       0.00      0.00       0.00         53

   accuracy                            0.44         94
```

```
  macro avg        0.22        0.50        0.30        94
weighted avg       0.19        0.44        0.26        94
```

Found 943 files belonging to 2 classes.
Using 849 files for training.

/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 62ms/step - accuracy: 0.5300 - loss: 0.8960 - val_accuracy: 0.5638
- val_loss: 0.6735 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.6525 - loss: 0.6335 - val_accuracy: 0.6702
- val_loss: 0.6451 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6784 - loss: 0.5997 - val_accuracy: 0.6809
- val_loss: 0.6083 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 39ms/step - accuracy: 0.7173 - loss: 0.5709 - val_accuracy: 0.6702
- val_loss: 0.6447 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 40ms/step - accuracy: 0.6843 - loss: 0.6102 - val_accuracy: 0.6596
- val_loss: 0.6928 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 39ms/step - accuracy: 0.7161 - loss: 0.5754 - val_accuracy: 0.6702
- val_loss: 0.6360 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 39ms/step - accuracy: 0.7444 - loss: 0.5339 - val_accuracy: 0.7021
- val_loss: 0.5720 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 39ms/step - accuracy: 0.7114 - loss: 0.5583 - val_accuracy: 0.7447
- val_loss: 0.5729 - learning_rate: 0.0050
Epoch 9/60
```

```
27/27 - 1s - 39ms/step - accuracy: 0.7303 - loss: 0.5406 - val_accuracy: 0.7553
- val_loss: 0.5536 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 39ms/step - accuracy: 0.7420 - loss: 0.5180 - val_accuracy: 0.7660
- val_loss: 0.5374 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 39ms/step - accuracy: 0.7538 - loss: 0.5217 - val_accuracy: 0.7447
- val_loss: 0.6286 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 38ms/step - accuracy: 0.7444 - loss: 0.5274 - val_accuracy: 0.7340
- val_loss: 0.5891 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 39ms/step - accuracy: 0.7774 - loss: 0.5100 - val_accuracy: 0.7021
- val_loss: 0.5742 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 39ms/step - accuracy: 0.7750 - loss: 0.4871 - val_accuracy: 0.7234
- val_loss: 0.5519 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 39ms/step - accuracy: 0.7739 - loss: 0.4867 - val_accuracy: 0.7553
- val_loss: 0.5337 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 39ms/step - accuracy: 0.7562 - loss: 0.5123 - val_accuracy: 0.7872
- val_loss: 0.5248 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 38ms/step - accuracy: 0.7715 - loss: 0.4986 - val_accuracy: 0.7766
- val_loss: 0.5159 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 39ms/step - accuracy: 0.7597 - loss: 0.4853 - val_accuracy: 0.7447
- val_loss: 0.5468 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 38ms/step - accuracy: 0.7727 - loss: 0.5017 - val_accuracy: 0.6809
- val_loss: 0.6665 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 39ms/step - accuracy: 0.7727 - loss: 0.4777 - val_accuracy: 0.7766
- val_loss: 0.5006 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 38ms/step - accuracy: 0.7880 - loss: 0.4536 - val_accuracy: 0.6915
- val_loss: 0.5347 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 38ms/step - accuracy: 0.7786 - loss: 0.4717 - val_accuracy: 0.7872
- val_loss: 0.5137 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 38ms/step - accuracy: 0.7856 - loss: 0.4641 - val_accuracy: 0.7553
- val_loss: 0.4930 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 38ms/step - accuracy: 0.7951 - loss: 0.4251 - val_accuracy: 0.7447
- val_loss: 0.5241 - learning_rate: 0.0050
Epoch 25/60
```

```
27/27 - 1s - 39ms/step - accuracy: 0.8127 - loss: 0.4212 - val_accuracy: 0.7872
- val_loss: 0.4924 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 38ms/step - accuracy: 0.8233 - loss: 0.4070 - val_accuracy: 0.7660
- val_loss: 0.5001 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 38ms/step - accuracy: 0.8198 - loss: 0.4109 - val_accuracy: 0.7553
- val_loss: 0.5149 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.8221 - loss: 0.4086 - val_accuracy: 0.8085
- val_loss: 0.4781 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.8115 - loss: 0.4594 - val_accuracy: 0.8085
- val_loss: 0.4353 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.8115 - loss: 0.4108 - val_accuracy: 0.8298
- val_loss: 0.3888 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.8292 - loss: 0.3965 - val_accuracy: 0.7979
- val_loss: 0.4632 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.7845 - loss: 0.5107 - val_accuracy: 0.7553
- val_loss: 0.5484 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.8210 - loss: 0.4041 - val_accuracy: 0.7872
- val_loss: 0.5799 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 38ms/step - accuracy: 0.8198 - loss: 0.3854 - val_accuracy: 0.8191
- val_loss: 0.4884 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 38ms/step - accuracy: 0.8233 - loss: 0.3964 - val_accuracy: 0.8191
- val_loss: 0.4100 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 39ms/step - accuracy: 0.8528 - loss: 0.3531 - val_accuracy: 0.8085
- val_loss: 0.4338 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.8233 - loss: 0.3781 - val_accuracy: 0.7660
- val_loss: 0.4107 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 38ms/step - accuracy: 0.8716 - loss: 0.3230 - val_accuracy: 0.7766
- val_loss: 0.4944 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.8445 - loss: 0.3667 - val_accuracy: 0.8511
- val_loss: 0.3692 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.8645 - loss: 0.3020 - val_accuracy: 0.8511
- val_loss: 0.3704 - learning_rate: 0.0050
Epoch 41/60
```

```
27/27 - 1s - 38ms/step - accuracy: 0.8622 - loss: 0.3374 - val_accuracy: 0.8511
- val_loss: 0.4647 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 39ms/step - accuracy: 0.8528 - loss: 0.3791 - val_accuracy: 0.7766
- val_loss: 0.4094 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 38ms/step - accuracy: 0.8587 - loss: 0.3170 - val_accuracy: 0.7340
- val_loss: 0.7361 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 38ms/step - accuracy: 0.8539 - loss: 0.3666 - val_accuracy: 0.8298
- val_loss: 0.4019 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 38ms/step - accuracy: 0.8528 - loss: 0.3413 - val_accuracy: 0.8191
- val_loss: 0.3532 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 38ms/step - accuracy: 0.8351 - loss: 0.3960 - val_accuracy: 0.8191
- val_loss: 0.4105 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 38ms/step - accuracy: 0.8622 - loss: 0.3128 - val_accuracy: 0.8085
- val_loss: 0.4474 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 38ms/step - accuracy: 0.8539 - loss: 0.3536 - val_accuracy: 0.7660
- val_loss: 0.5026 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 38ms/step - accuracy: 0.8622 - loss: 0.3013 - val_accuracy: 0.8191
- val_loss: 0.4474 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 38ms/step - accuracy: 0.8575 - loss: 0.2980 - val_accuracy: 0.8511
- val_loss: 0.3513 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 39ms/step - accuracy: 0.8681 - loss: 0.3130 - val_accuracy: 0.7766
- val_loss: 0.4198 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 39ms/step - accuracy: 0.8563 - loss: 0.3106 - val_accuracy: 0.8191
- val_loss: 0.4350 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8669 - loss: 0.3163 - val_accuracy: 0.8404
- val_loss: 0.3795 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 38ms/step - accuracy: 0.8575 - loss: 0.3337 - val_accuracy: 0.8617
- val_loss: 0.3859 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 38ms/step - accuracy: 0.8822 - loss: 0.2629 - val_accuracy: 0.8511
- val_loss: 0.3699 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 38ms/step - accuracy: 0.8728 - loss: 0.3021 - val_accuracy: 0.8085
- val_loss: 0.4305 - learning_rate: 0.0050
Epoch 57/60
```

```
27/27 - 1s - 38ms/step - accuracy: 0.8410 - loss: 0.3453 - val_accuracy: 0.8191
- val_loss: 0.4404 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 38ms/step - accuracy: 0.8763 - loss: 0.2985 - val_accuracy: 0.8085
- val_loss: 0.5799 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 38ms/step - accuracy: 0.8563 - loss: 0.3558 - val_accuracy: 0.8085
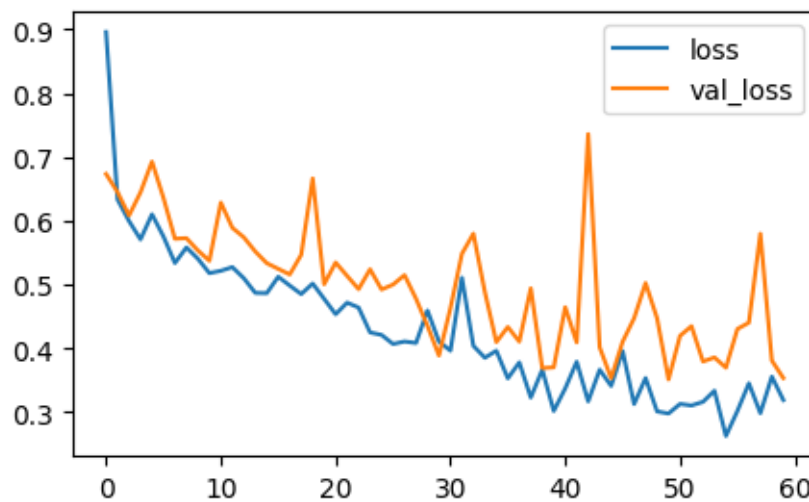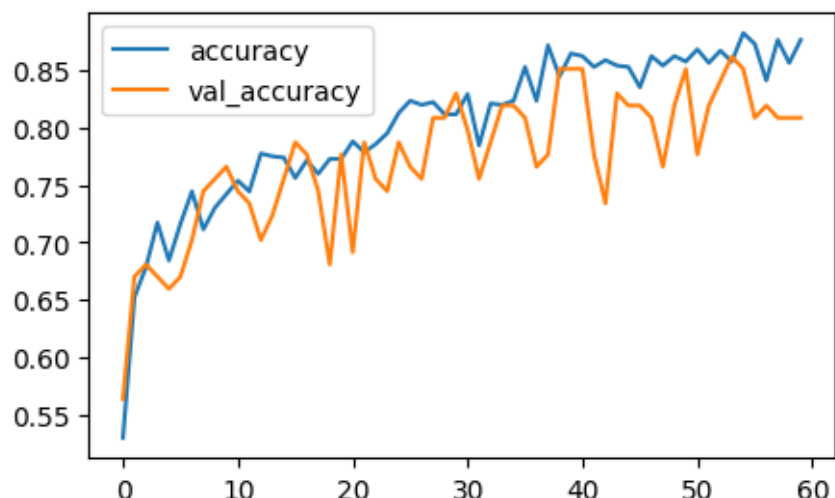- val_loss: 0.3810 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 38ms/step - accuracy: 0.8763 - loss: 0.3191 - val_accuracy: 0.8085
- val_loss: 0.3536 - learning_rate: 0.0050
```

```
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.
```

```
Current validation accuracy: 0.8085106611251831
Reseting all weights…
Current number of trials: 7
```

```
['loss', 'compile_metrics']
3/3              0s 11ms/step -
accuracy: 0.8261 - loss: 0.3537
[0.3535735309123993, 0.8085106611251831]
3/3              0s 23ms/step
Classification Report:
             precision    recall  f1-score   support

     Female       0.79      0.76      0.78        41
       Male       0.82      0.85      0.83        53

   accuracy                          0.81        94
  macro avg       0.81      0.80      0.80        94
weighted avg      0.81      0.81      0.81        94

Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 63ms/step - accuracy: 0.5159 - loss: 0.8428 - val_accuracy: 0.5106
- val_loss: 0.6940 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.5995 - loss: 0.6580 - val_accuracy: 0.6596
- val_loss: 0.6309 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.6525 - loss: 0.6392 - val_accuracy: 0.6596
- val_loss: 0.6332 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 38ms/step - accuracy: 0.6349 - loss: 0.6451 - val_accuracy: 0.6064
```

```
- val_loss: 0.6411 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 38ms/step - accuracy: 0.6843 - loss: 0.6183 - val_accuracy: 0.5426
- val_loss: 0.6831 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 39ms/step - accuracy: 0.6514 - loss: 0.6192 - val_accuracy: 0.6383
- val_loss: 0.6330 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.6678 - loss: 0.6068 - val_accuracy: 0.6383
- val_loss: 0.6507 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.6737 - loss: 0.5874 - val_accuracy: 0.6596
- val_loss: 0.6214 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.6820 - loss: 0.6060 - val_accuracy: 0.6064
- val_loss: 0.6461 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.6938 - loss: 0.5870 - val_accuracy: 0.6596
- val_loss: 0.5664 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7409 - loss: 0.5520 - val_accuracy: 0.6277
- val_loss: 0.6365 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.6655 - loss: 0.6019 - val_accuracy: 0.6383
- val_loss: 0.6245 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.6855 - loss: 0.5685 - val_accuracy: 0.7234
- val_loss: 0.5738 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 38ms/step - accuracy: 0.7197 - loss: 0.5745 - val_accuracy: 0.7021
- val_loss: 0.5681 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.6678 - loss: 0.6021 - val_accuracy: 0.6809
- val_loss: 0.5953 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7161 - loss: 0.5723 - val_accuracy: 0.7340
- val_loss: 0.5657 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.6985 - loss: 0.5827 - val_accuracy: 0.6915
- val_loss: 0.6229 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7055 - loss: 0.5811 - val_accuracy: 0.6489
- val_loss: 0.6427 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7020 - loss: 0.5737 - val_accuracy: 0.6915
- val_loss: 0.5713 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7326 - loss: 0.5490 - val_accuracy: 0.7447
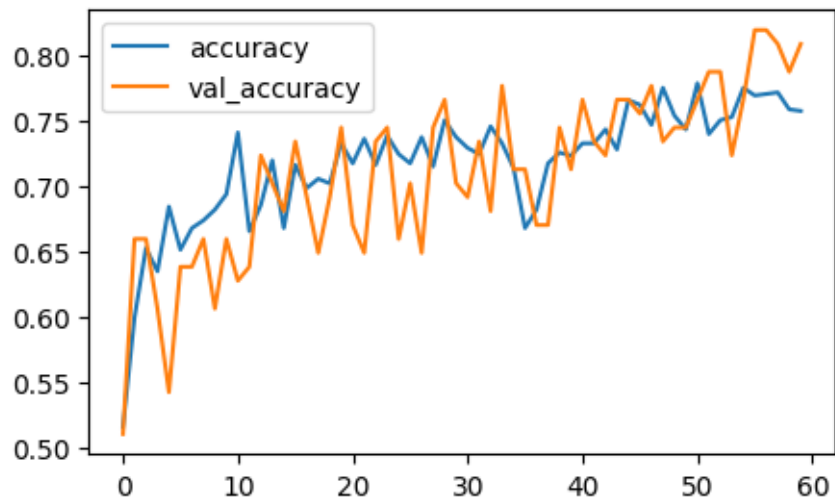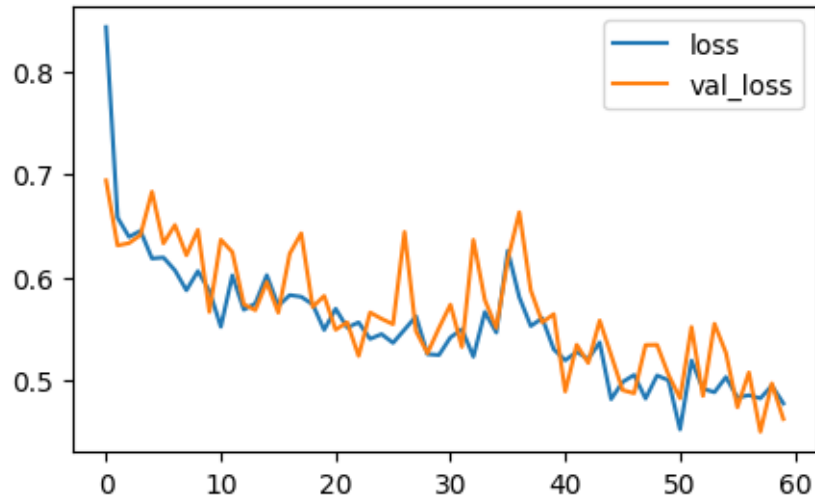```

```
- val_loss: 0.5819 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 38ms/step - accuracy: 0.7173 - loss: 0.5695 - val_accuracy: 0.6702
- val_loss: 0.5491 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 39ms/step - accuracy: 0.7362 - loss: 0.5512 - val_accuracy: 0.6489
- val_loss: 0.5564 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 38ms/step - accuracy: 0.7161 - loss: 0.5562 - val_accuracy: 0.7340
- val_loss: 0.5237 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7385 - loss: 0.5402 - val_accuracy: 0.7447
- val_loss: 0.5659 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 38ms/step - accuracy: 0.7244 - loss: 0.5448 - val_accuracy: 0.6596
- val_loss: 0.5597 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 38ms/step - accuracy: 0.7173 - loss: 0.5364 - val_accuracy: 0.7021
- val_loss: 0.5545 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 38ms/step - accuracy: 0.7373 - loss: 0.5492 - val_accuracy: 0.6489
- val_loss: 0.6440 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 38ms/step - accuracy: 0.7150 - loss: 0.5621 - val_accuracy: 0.7447
- val_loss: 0.5478 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 38ms/step - accuracy: 0.7503 - loss: 0.5254 - val_accuracy: 0.7660
- val_loss: 0.5263 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 38ms/step - accuracy: 0.7373 - loss: 0.5246 - val_accuracy: 0.7021
- val_loss: 0.5508 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 38ms/step - accuracy: 0.7291 - loss: 0.5417 - val_accuracy: 0.6915
- val_loss: 0.5735 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 38ms/step - accuracy: 0.7244 - loss: 0.5496 - val_accuracy: 0.7340
- val_loss: 0.5323 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 38ms/step - accuracy: 0.7456 - loss: 0.5230 - val_accuracy: 0.6809
- val_loss: 0.6363 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.7326 - loss: 0.5664 - val_accuracy: 0.7766
- val_loss: 0.5780 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 38ms/step - accuracy: 0.7138 - loss: 0.5464 - val_accuracy: 0.7128
- val_loss: 0.5509 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 38ms/step - accuracy: 0.6678 - loss: 0.6258 - val_accuracy: 0.7128
```

```
- val_loss: 0.6175 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 39ms/step - accuracy: 0.6820 - loss: 0.5807 - val_accuracy: 0.6702
- val_loss: 0.6632 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 38ms/step - accuracy: 0.7173 - loss: 0.5527 - val_accuracy: 0.6702
- val_loss: 0.5873 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.7256 - loss: 0.5604 - val_accuracy: 0.7447
- val_loss: 0.5563 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.7232 - loss: 0.5302 - val_accuracy: 0.7128
- val_loss: 0.5643 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 38ms/step - accuracy: 0.7326 - loss: 0.5194 - val_accuracy: 0.7660
- val_loss: 0.4891 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 38ms/step - accuracy: 0.7326 - loss: 0.5276 - val_accuracy: 0.7340
- val_loss: 0.5345 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 38ms/step - accuracy: 0.7432 - loss: 0.5207 - val_accuracy: 0.7234
- val_loss: 0.5169 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.7279 - loss: 0.5367 - val_accuracy: 0.7660
- val_loss: 0.5580 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 38ms/step - accuracy: 0.7656 - loss: 0.4817 - val_accuracy: 0.7660
- val_loss: 0.5245 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.7621 - loss: 0.4984 - val_accuracy: 0.7553
- val_loss: 0.4905 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.7468 - loss: 0.5052 - val_accuracy: 0.7766
- val_loss: 0.4874 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.7750 - loss: 0.4823 - val_accuracy: 0.7340
- val_loss: 0.5342 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 38ms/step - accuracy: 0.7538 - loss: 0.5047 - val_accuracy: 0.7447
- val_loss: 0.5344 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.7432 - loss: 0.5001 - val_accuracy: 0.7447
- val_loss: 0.5053 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.7786 - loss: 0.4523 - val_accuracy: 0.7660
- val_loss: 0.4825 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.7397 - loss: 0.5192 - val_accuracy: 0.7872
```

```
- val_loss: 0.5518 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 39ms/step - accuracy: 0.7503 - loss: 0.4918 - val_accuracy: 0.7872
- val_loss: 0.4849 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 38ms/step - accuracy: 0.7527 - loss: 0.4885 - val_accuracy: 0.7234
- val_loss: 0.5550 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 38ms/step - accuracy: 0.7750 - loss: 0.5031 - val_accuracy: 0.7660
- val_loss: 0.5267 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 38ms/step - accuracy: 0.7691 - loss: 0.4833 - val_accuracy: 0.8191
- val_loss: 0.4738 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.4855 - val_accuracy: 0.8191
- val_loss: 0.5077 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 38ms/step - accuracy: 0.7715 - loss: 0.4825 - val_accuracy: 0.8085
- val_loss: 0.4501 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.7585 - loss: 0.4948 - val_accuracy: 0.7872
- val_loss: 0.4970 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 38ms/step - accuracy: 0.7574 - loss: 0.4776 - val_accuracy: 0.8085
- val_loss: 0.4625 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.8085106611251831
Reseting all weights…
Current number of trials: 8
```

```
['loss', 'compile_metrics']
3/3              0s 11ms/step -
accuracy: 0.8222 - loss: 0.4644
[0.4624978303909302, 0.8085106611251831]
3/3              0s 23ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.78      0.78      0.78        41
        Male       0.83      0.83      0.83        53

    accuracy                           0.81        94
```

```
   macro avg        0.81       0.81       0.81        94
weighted avg        0.81       0.81       0.81        94


Found 943 files belonging to 2 classes.

2025-05-06 08:11:38.706793: I tensorflow/core/framework/local_rendezvous.cc:405]
Local rendezvous is aborting with status: OUT_OF_RANGE: End of sequence

Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 65ms/step - accuracy: 0.5088 - loss: 1.1660 - val_accuracy: 0.5638
- val_loss: 0.6811 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.5595 - loss: 0.6883 - val_accuracy: 0.7021
- val_loss: 0.6597 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6678 - loss: 0.6226 - val_accuracy: 0.7021
- val_loss: 0.5569 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.6419 - loss: 0.6393 - val_accuracy: 0.6170
- val_loss: 0.6280 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.6867 - loss: 0.6028 - val_accuracy: 0.7447
- val_loss: 0.5342 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.6996 - loss: 0.5794 - val_accuracy: 0.7234
- val_loss: 0.5277 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.6832 - loss: 0.5841 - val_accuracy: 0.6489
- val_loss: 0.6064 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 38ms/step - accuracy: 0.7161 - loss: 0.5757 - val_accuracy: 0.7340
- val_loss: 0.4928 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.7232 - loss: 0.5444 - val_accuracy: 0.7766
- val_loss: 0.4754 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7197 - loss: 0.5520 - val_accuracy: 0.8085
- val_loss: 0.5872 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7468 - loss: 0.5250 - val_accuracy: 0.7766
- val_loss: 0.4693 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 38ms/step - accuracy: 0.7503 - loss: 0.5260 - val_accuracy: 0.7979
- val_loss: 0.4604 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.7173 - loss: 0.5385 - val_accuracy: 0.7234
```

```
- val_loss: 0.5727 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7468 - loss: 0.5111 - val_accuracy: 0.7979
- val_loss: 0.4790 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7739 - loss: 0.4916 - val_accuracy: 0.8085
- val_loss: 0.4398 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 38ms/step - accuracy: 0.7703 - loss: 0.4918 - val_accuracy: 0.7766
- val_loss: 0.5062 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7621 - loss: 0.5053 - val_accuracy: 0.8085
- val_loss: 0.5210 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7691 - loss: 0.4792 - val_accuracy: 0.7872
- val_loss: 0.5166 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 38ms/step - accuracy: 0.7562 - loss: 0.4919 - val_accuracy: 0.8085
- val_loss: 0.4426 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7962 - loss: 0.4472 - val_accuracy: 0.7872
- val_loss: 0.5115 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4637 - val_accuracy: 0.7872
- val_loss: 0.5252 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7680 - loss: 0.4937 - val_accuracy: 0.8404
- val_loss: 0.4331 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 38ms/step - accuracy: 0.7821 - loss: 0.4781 - val_accuracy: 0.7979
- val_loss: 0.4328 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 38ms/step - accuracy: 0.7868 - loss: 0.4540 - val_accuracy: 0.7766
- val_loss: 0.4416 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.8021 - loss: 0.4284 - val_accuracy: 0.7979
- val_loss: 0.4518 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.7727 - loss: 0.4980 - val_accuracy: 0.7872
- val_loss: 0.4959 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.7621 - loss: 0.4965 - val_accuracy: 0.7979
- val_loss: 0.4557 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 38ms/step - accuracy: 0.7668 - loss: 0.4897 - val_accuracy: 0.7128
- val_loss: 0.6440 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.7680 - loss: 0.4836 - val_accuracy: 0.8085
```

```
- val_loss: 0.4878 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7986 - loss: 0.4509 - val_accuracy: 0.7766
- val_loss: 0.5157 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.8045 - loss: 0.4395 - val_accuracy: 0.7979
- val_loss: 0.5221 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.7986 - loss: 0.4111 - val_accuracy: 0.7872
- val_loss: 0.5925 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.8233 - loss: 0.4113 - val_accuracy: 0.8723
- val_loss: 0.4378 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.8068 - loss: 0.4342 - val_accuracy: 0.7872
- val_loss: 0.4827 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.7727 - loss: 0.4967 - val_accuracy: 0.7766
- val_loss: 0.4847 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.7998 - loss: 0.4347 - val_accuracy: 0.7979
- val_loss: 0.5386 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.7809 - loss: 0.4946 - val_accuracy: 0.7660
- val_loss: 0.4967 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.7833 - loss: 0.4750 - val_accuracy: 0.8085
- val_loss: 0.4616 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.8009 - loss: 0.4387 - val_accuracy: 0.7660
- val_loss: 0.5138 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 39ms/step - accuracy: 0.8139 - loss: 0.4287 - val_accuracy: 0.7979
- val_loss: 0.5713 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.8021 - loss: 0.4394 - val_accuracy: 0.8511
- val_loss: 0.4848 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.7868 - loss: 0.4593 - val_accuracy: 0.8191
- val_loss: 0.4277 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.8174 - loss: 0.3948 - val_accuracy: 0.8191
- val_loss: 0.5713 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 38ms/step - accuracy: 0.8174 - loss: 0.4107 - val_accuracy: 0.7234
- val_loss: 0.7854 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8351 - loss: 0.3829 - val_accuracy: 0.8085
```

```
- val_loss: 0.4757 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8151 - loss: 0.3895 - val_accuracy: 0.8191
- val_loss: 0.4536 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8163 - loss: 0.4247 - val_accuracy: 0.8404
- val_loss: 0.4658 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8257 - loss: 0.3916 - val_accuracy: 0.8298
- val_loss: 0.5505 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.8151 - loss: 0.4143 - val_accuracy: 0.8404
- val_loss: 0.5246 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8092 - loss: 0.4154 - val_accuracy: 0.8085
- val_loss: 0.5087 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.8269 - loss: 0.3827 - val_accuracy: 0.7979
- val_loss: 0.4914 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8445 - loss: 0.3676 - val_accuracy: 0.7979
- val_loss: 0.5340 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 38ms/step - accuracy: 0.8516 - loss: 0.3552 - val_accuracy: 0.7872
- val_loss: 0.4567 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8327 - loss: 0.3644 - val_accuracy: 0.8191
- val_loss: 0.4435 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 38ms/step - accuracy: 0.8528 - loss: 0.3391 - val_accuracy: 0.7766
- val_loss: 0.4981 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8292 - loss: 0.3834 - val_accuracy: 0.8085
- val_loss: 0.4835 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8433 - loss: 0.3571 - val_accuracy: 0.7660
- val_loss: 0.4935 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8587 - loss: 0.3358 - val_accuracy: 0.8191
- val_loss: 0.6030 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8622 - loss: 0.3016 - val_accuracy: 0.8085
- val_loss: 0.5090 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8563 - loss: 0.3532 - val_accuracy: 0.7872
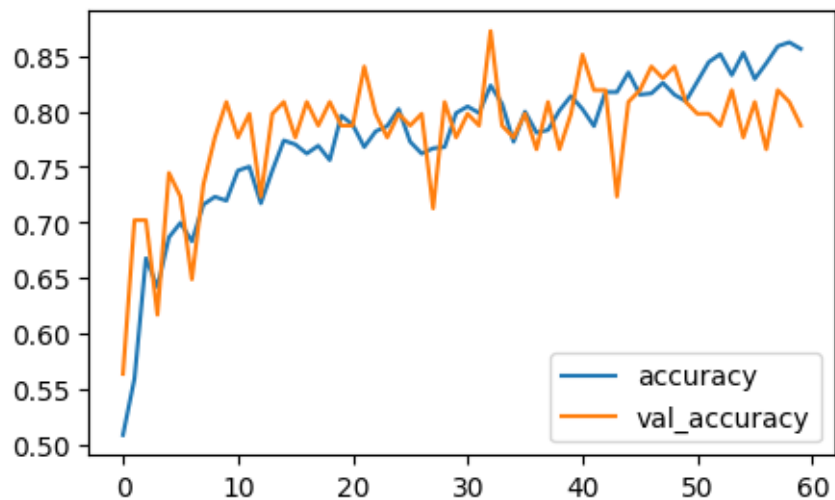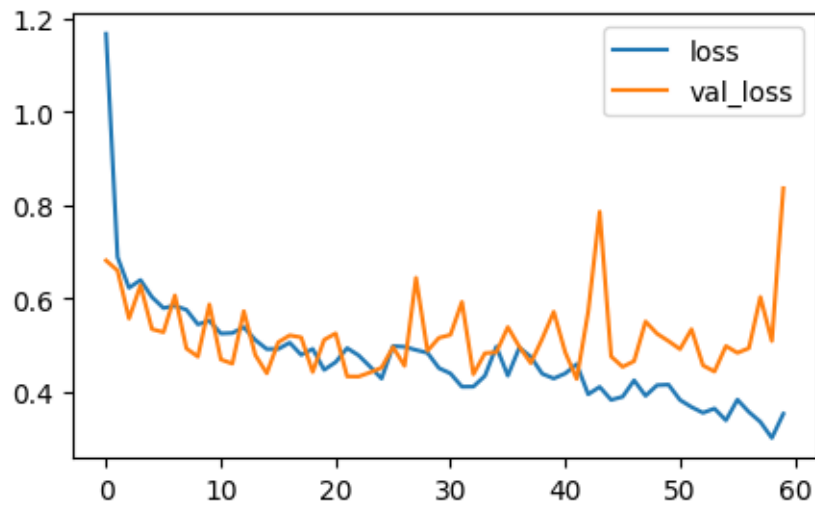- val_loss: 0.8356 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
```

```
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.
```

Current validation accuracy: 0.7872340679168701
Reseting all weights…
Current number of trials: 9


```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.7608 - loss: 0.8878
[0.8356421589851379, 0.7872340679168701]
```

```
3/3              0s 22ms/step
Classification Report:
             precision    recall  f1-score   support

      Female       0.68      0.98      0.80        41
        Male       0.97      0.64      0.77        53

    accuracy                           0.79        94
   macro avg       0.82      0.81      0.79        94
weighted avg       0.84      0.79      0.78        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 60ms/step - accuracy: 0.4700 - loss: 0.8267 - val_accuracy: 0.5851
- val_loss: 0.6926 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5147 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.5218 - loss: 0.6920 - val_accuracy: 0.4574
- val_loss: 0.6923 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.5618 - loss: 0.6897 - val_accuracy: 0.6383
- val_loss: 0.6471 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.6090 - loss: 0.6496 - val_accuracy: 0.5213
- val_loss: 0.7304 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 36ms/step - accuracy: 0.6537 - loss: 0.6287 - val_accuracy: 0.6915
- val_loss: 0.5899 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.7102 - loss: 0.5737 - val_accuracy: 0.6702
- val_loss: 0.6893 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 38ms/step - accuracy: 0.7091 - loss: 0.5730 - val_accuracy: 0.6809
- val_loss: 0.6153 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 38ms/step - accuracy: 0.7138 - loss: 0.5624 - val_accuracy: 0.6915
- val_loss: 0.5739 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 39ms/step - accuracy: 0.7550 - loss: 0.5195 - val_accuracy: 0.7660
- val_loss: 0.5890 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7185 - loss: 0.5414 - val_accuracy: 0.7340
- val_loss: 0.5936 - learning_rate: 0.0050
```

```
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.7279 - loss: 0.5414 - val_accuracy: 0.7128
- val_loss: 0.5618 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.7585 - loss: 0.5128 - val_accuracy: 0.7447
- val_loss: 0.6047 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7456 - loss: 0.5310 - val_accuracy: 0.7128
- val_loss: 0.5825 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7444 - loss: 0.5288 - val_accuracy: 0.7340
- val_loss: 0.5246 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7562 - loss: 0.4915 - val_accuracy: 0.7340
- val_loss: 0.5893 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7574 - loss: 0.5110 - val_accuracy: 0.7660
- val_loss: 0.5524 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7503 - loss: 0.5092 - val_accuracy: 0.7553
- val_loss: 0.5557 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7668 - loss: 0.4980 - val_accuracy: 0.6809
- val_loss: 0.5763 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.4824 - val_accuracy: 0.7447
- val_loss: 0.5814 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7668 - loss: 0.4884 - val_accuracy: 0.7021
- val_loss: 0.5494 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7821 - loss: 0.4549 - val_accuracy: 0.7553
- val_loss: 0.5304 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.7927 - loss: 0.4598 - val_accuracy: 0.7128
- val_loss: 0.5893 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7903 - loss: 0.4579 - val_accuracy: 0.7660
- val_loss: 0.5395 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7762 - loss: 0.4548 - val_accuracy: 0.7447
- val_loss: 0.5337 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 39ms/step - accuracy: 0.7927 - loss: 0.4374 - val_accuracy: 0.7660
- val_loss: 0.5432 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.7915 - loss: 0.4484 - val_accuracy: 0.7872
- val_loss: 0.5903 - learning_rate: 0.0050
```

```
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.7786 - loss: 0.4633 - val_accuracy: 0.7553
- val_loss: 0.5563 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4413 - val_accuracy: 0.7553
- val_loss: 0.5586 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7739 - loss: 0.4541 - val_accuracy: 0.7660
- val_loss: 0.5335 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.7845 - loss: 0.4576 - val_accuracy: 0.7340
- val_loss: 0.5216 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.7927 - loss: 0.4408 - val_accuracy: 0.7766
- val_loss: 0.5374 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.7998 - loss: 0.4270 - val_accuracy: 0.7872
- val_loss: 0.5830 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.8139 - loss: 0.3983 - val_accuracy: 0.7979
- val_loss: 0.5287 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.7633 - loss: 0.4528 - val_accuracy: 0.7340
- val_loss: 0.5584 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.8233 - loss: 0.3858 - val_accuracy: 0.7660
- val_loss: 0.6142 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.8045 - loss: 0.4144 - val_accuracy: 0.7447
- val_loss: 0.5503 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.8092 - loss: 0.4274 - val_accuracy: 0.7553
- val_loss: 0.5076 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.8104 - loss: 0.4052 - val_accuracy: 0.7660
- val_loss: 0.5567 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.8115 - loss: 0.4043 - val_accuracy: 0.7872
- val_loss: 0.5004 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.8092 - loss: 0.4190 - val_accuracy: 0.7447
- val_loss: 0.5552 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 39ms/step - accuracy: 0.8186 - loss: 0.3893 - val_accuracy: 0.7872
- val_loss: 0.5160 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 38ms/step - accuracy: 0.8280 - loss: 0.3788 - val_accuracy: 0.7979
- val_loss: 0.5120 - learning_rate: 0.0050
```

```
Epoch 44/60
27/27 - 1s - 38ms/step - accuracy: 0.7903 - loss: 0.4559 - val_accuracy: 0.7234
- val_loss: 0.4857 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8151 - loss: 0.4026 - val_accuracy: 0.7234
- val_loss: 0.5759 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8115 - loss: 0.3935 - val_accuracy: 0.7766
- val_loss: 0.5520 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8221 - loss: 0.3874 - val_accuracy: 0.7340
- val_loss: 0.5401 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 36ms/step - accuracy: 0.8375 - loss: 0.3689 - val_accuracy: 0.7553
- val_loss: 0.6012 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.8139 - loss: 0.3921 - val_accuracy: 0.7553
- val_loss: 0.6172 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8457 - loss: 0.3552 - val_accuracy: 0.7340
- val_loss: 0.5002 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.8280 - loss: 0.3782 - val_accuracy: 0.7553
- val_loss: 0.5526 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8375 - loss: 0.3692 - val_accuracy: 0.7766
- val_loss: 0.5633 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8151 - loss: 0.3840 - val_accuracy: 0.7872
- val_loss: 0.5649 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.8280 - loss: 0.3529 - val_accuracy: 0.7766
- val_loss: 0.7265 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8351 - loss: 0.3681 - val_accuracy: 0.7553
- val_loss: 0.6336 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8316 - loss: 0.3516 - val_accuracy: 0.8085
- val_loss: 0.5083 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8422 - loss: 0.3569 - val_accuracy: 0.7979
- val_loss: 0.5514 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 38ms/step - accuracy: 0.8363 - loss: 0.3594 - val_accuracy: 0.7979
- val_loss: 0.5514 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8457 - loss: 0.3305 - val_accuracy: 0.7340
- val_loss: 0.6457 - learning_rate: 0.0050
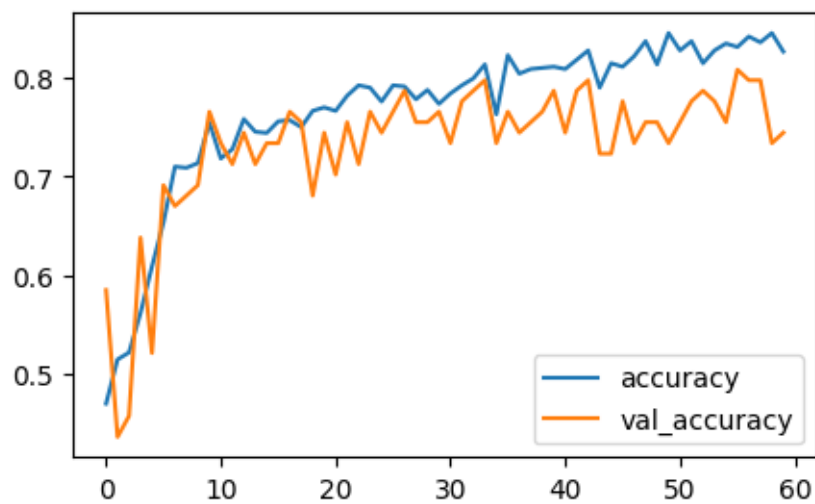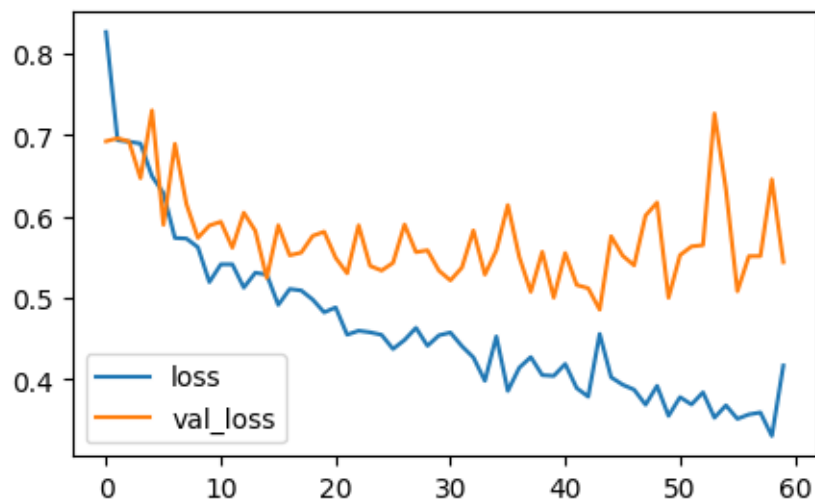```

```
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8269 - loss: 0.4169 - val_accuracy: 0.7447
- val_loss: 0.5441 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.7446808218955994
Reseting all weights…
Current number of trials: 10
```

```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.7161 - loss: 0.5778
[0.544063150882721, 0.7446808218955994]
3/3              0s 22ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.70      0.73      0.71        41
        Male       0.78      0.75      0.77        53

    accuracy                           0.74        94
   macro avg       0.74      0.74      0.74        94
weighted avg       0.75      0.74      0.75        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 62ms/step - accuracy: 0.4982 - loss: 0.8168 - val_accuracy: 0.5638
- val_loss: 0.6881 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.4759 - loss: 0.6941 - val_accuracy: 0.5638
- val_loss: 0.6840 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.5041 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
```

```
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6930 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
```

```
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
```

```
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
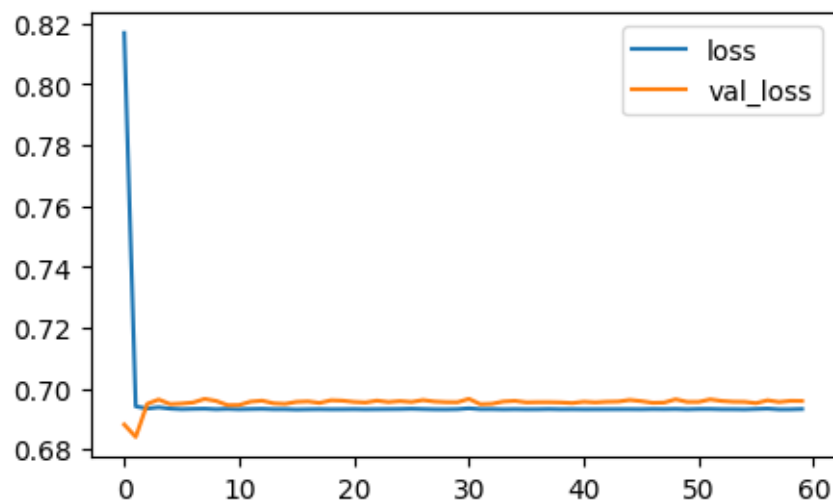- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
```

```
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
```

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.save('my_model.keras')` or `keras.saving.save_model(model, 'my_model.keras')`.

```
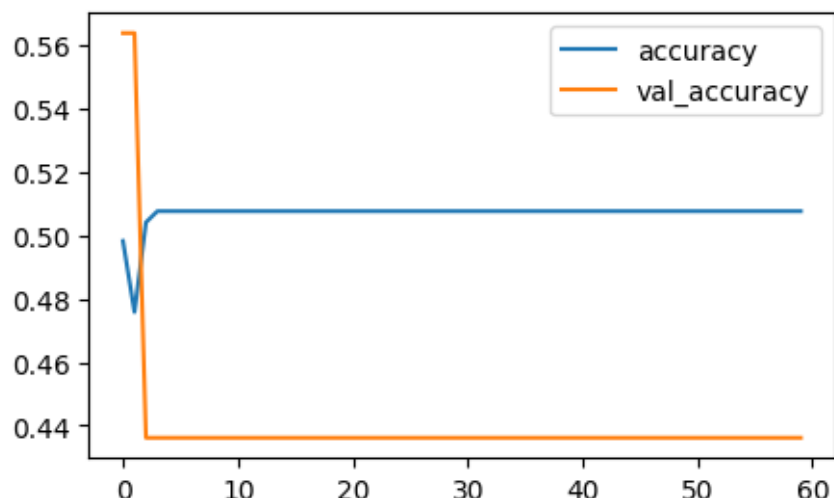Current validation accuracy: 0.43617022037506104
Resetting all weights…
Current number of trials: 11
```

```
['loss', 'compile_metrics']
3/3                0s 10ms/step -
accuracy: 0.4603 - loss: 0.6949
[0.6958519220352173, 0.43617022037506104]
3/3                0s 22ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.44      1.00      0.61        41
        Male       0.00      0.00      0.00        53

    accuracy                           0.44        94
   macro avg       0.22      0.50      0.30        94
weighted avg       0.19      0.44      0.26        94


Found 943 files belonging to 2 classes.
Using 849 files for training.

/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
```

Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 60ms/step - accuracy: 0.5100 - loss: 1.1775 - val_accuracy: 0.5638
- val_loss: 0.6887 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5595 - loss: 0.6791 - val_accuracy: 0.5532
- val_loss: 0.7167 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.5948 - loss: 0.6675 - val_accuracy: 0.5638
- val_loss: 0.6832 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 38ms/step - accuracy: 0.5960 - loss: 0.6555 - val_accuracy: 0.5319
- val_loss: 0.6890 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.5960 - loss: 0.6668 - val_accuracy: 0.5000
- val_loss: 0.6939 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 36ms/step - accuracy: 0.6172 - loss: 0.6535 - val_accuracy: 0.5319
- val_loss: 0.8210 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.6561 - loss: 0.6155 - val_accuracy: 0.5426
- val_loss: 0.7210 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.6360 - loss: 0.6190 - val_accuracy: 0.5426
- val_loss: 0.6810 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 36ms/step - accuracy: 0.6384 - loss: 0.6222 - val_accuracy: 0.5851
- val_loss: 0.6609 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.6714 - loss: 0.6162 - val_accuracy: 0.6702
- val_loss: 0.6352 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.6855 - loss: 0.6025 - val_accuracy: 0.5851
- val_loss: 0.7382 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.6726 - loss: 0.5836 - val_accuracy: 0.6170
- val_loss: 0.6330 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.6832 - loss: 0.5632 - val_accuracy: 0.6915
- val_loss: 0.6243 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 36ms/step - accuracy: 0.7185 - loss: 0.5363 - val_accuracy: 0.6809
- val_loss: 0.6234 - learning_rate: 0.0050

```
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7279 - loss: 0.5820 - val_accuracy: 0.6489
- val_loss: 0.6879 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7420 - loss: 0.5386 - val_accuracy: 0.7234
- val_loss: 0.5611 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7597 - loss: 0.5214 - val_accuracy: 0.7021
- val_loss: 0.6153 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7491 - loss: 0.5155 - val_accuracy: 0.6383
- val_loss: 0.5875 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 36ms/step - accuracy: 0.7644 - loss: 0.5090 - val_accuracy: 0.7553
- val_loss: 0.5099 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.4956 - val_accuracy: 0.7660
- val_loss: 0.4970 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.7597 - loss: 0.5075 - val_accuracy: 0.7872
- val_loss: 0.4996 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 36ms/step - accuracy: 0.7715 - loss: 0.5080 - val_accuracy: 0.7660
- val_loss: 0.5055 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.7786 - loss: 0.4764 - val_accuracy: 0.7340
- val_loss: 0.4945 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7644 - loss: 0.4575 - val_accuracy: 0.7766
- val_loss: 0.5261 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7833 - loss: 0.4797 - val_accuracy: 0.7340
- val_loss: 0.5305 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.7998 - loss: 0.4213 - val_accuracy: 0.8298
- val_loss: 0.4706 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.7491 - loss: 0.5136 - val_accuracy: 0.7660
- val_loss: 0.5486 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.7892 - loss: 0.4504 - val_accuracy: 0.7766
- val_loss: 0.5289 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.8163 - loss: 0.4067 - val_accuracy: 0.7979
- val_loss: 0.4753 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.8127 - loss: 0.4110 - val_accuracy: 0.7872
- val_loss: 0.5439 - learning_rate: 0.0050
```

```
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.8198 - loss: 0.3908 - val_accuracy: 0.7872
- val_loss: 0.4877 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.8033 - loss: 0.4226 - val_accuracy: 0.7660
- val_loss: 0.4445 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.8363 - loss: 0.3751 - val_accuracy: 0.7766
- val_loss: 0.3895 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.8398 - loss: 0.3669 - val_accuracy: 0.7872
- val_loss: 0.4116 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.8068 - loss: 0.4015 - val_accuracy: 0.7447
- val_loss: 0.4602 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.8375 - loss: 0.3577 - val_accuracy: 0.7447
- val_loss: 0.4871 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.8327 - loss: 0.3782 - val_accuracy: 0.7553
- val_loss: 0.5145 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.8316 - loss: 0.3607 - val_accuracy: 0.7766
- val_loss: 0.4903 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.8539 - loss: 0.3517 - val_accuracy: 0.8404
- val_loss: 0.3655 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.8492 - loss: 0.3355 - val_accuracy: 0.7979
- val_loss: 0.3639 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.8410 - loss: 0.3589 - val_accuracy: 0.8511
- val_loss: 0.4112 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.8410 - loss: 0.3522 - val_accuracy: 0.7872
- val_loss: 0.4638 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 36ms/step - accuracy: 0.8457 - loss: 0.3367 - val_accuracy: 0.8085
- val_loss: 0.4687 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.8563 - loss: 0.3256 - val_accuracy: 0.8298
- val_loss: 0.4108 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8681 - loss: 0.2949 - val_accuracy: 0.8085
- val_loss: 0.3091 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8645 - loss: 0.3070 - val_accuracy: 0.7979
- val_loss: 0.4929 - learning_rate: 0.0050
```

```
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8716 - loss: 0.3017 - val_accuracy: 0.8298
- val_loss: 0.4806 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 38ms/step - accuracy: 0.8657 - loss: 0.3246 - val_accuracy: 0.8191
- val_loss: 0.4407 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.8539 - loss: 0.3380 - val_accuracy: 0.8085
- val_loss: 0.3765 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8905 - loss: 0.2836 - val_accuracy: 0.8298
- val_loss: 0.4266 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.8657 - loss: 0.3099 - val_accuracy: 0.8511
- val_loss: 0.3984 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8481 - loss: 0.3700 - val_accuracy: 0.7979
- val_loss: 0.4750 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 38ms/step - accuracy: 0.8587 - loss: 0.3298 - val_accuracy: 0.8404
- val_loss: 0.3612 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 38ms/step - accuracy: 0.8716 - loss: 0.2995 - val_accuracy: 0.8511
- val_loss: 0.4920 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8799 - loss: 0.3038 - val_accuracy: 0.8511
- val_loss: 0.3624 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 38ms/step - accuracy: 0.8610 - loss: 0.3218 - val_accuracy: 0.8298
- val_loss: 0.4513 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8693 - loss: 0.2838 - val_accuracy: 0.8191
- val_loss: 0.3705 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.9034 - loss: 0.2630 - val_accuracy: 0.8511
- val_loss: 0.3586 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8799 - loss: 0.2643 - val_accuracy: 0.8404
- val_loss: 0.4835 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.9011 - loss: 0.2428 - val_accuracy: 0.8298
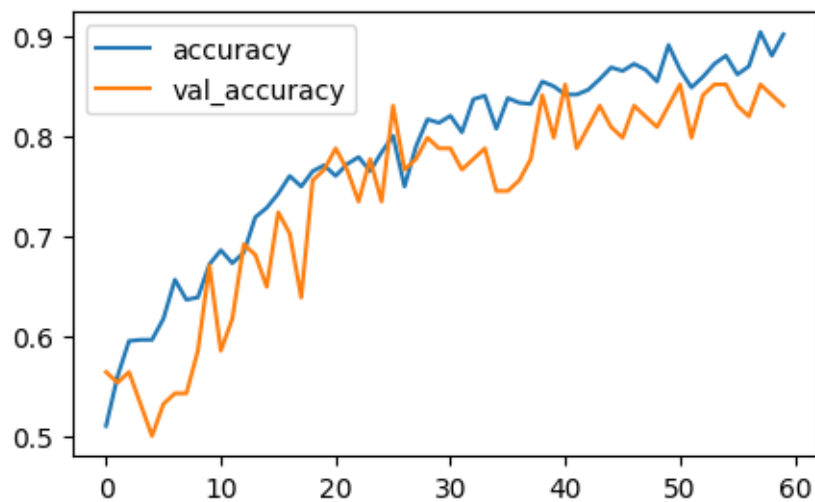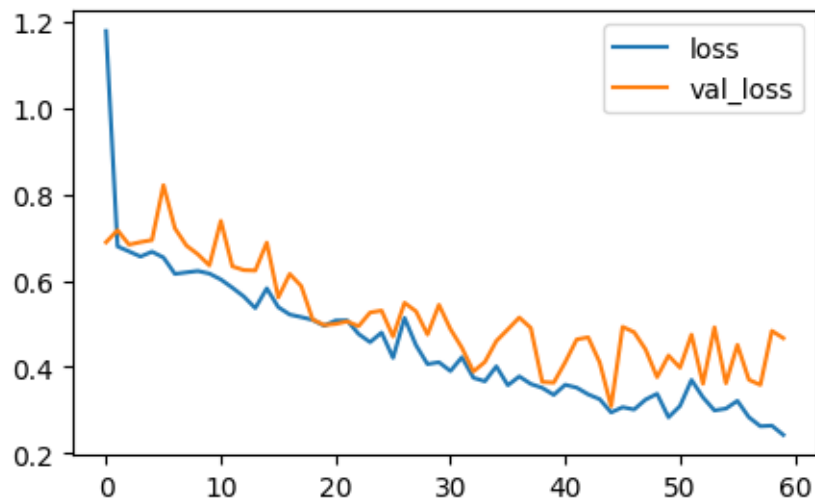- val_loss: 0.4669 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.
```

Current validation accuracy: 0.8297872543334961
Reseting all weights…
Current number of trials: 12


```
['loss', 'compile_metrics']
3/3              0s 11ms/step -
accuracy: 0.8446 - loss: 0.4625
[0.46688705682754517, 0.8297872543334961]
3/3              0s 21ms/step
Classification Report:
              precision    recall  f1-score    support
```

	precision	recall	f1-score	support
Female	0.84	0.76	0.79	41
Male	0.82	0.89	0.85	53
accuracy			0.83	94
macro avg	0.83	0.82	0.82	94
weighted avg	0.83	0.83	0.83	94

```
Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 66ms/step - accuracy: 0.5465 - loss: 1.0338 - val_accuracy: 0.4362
- val_loss: 0.7201 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.5406 - loss: 0.6945 - val_accuracy: 0.4362
- val_loss: 0.7011 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6986 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6972 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6972 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.5300 - loss: 0.6952 - val_accuracy: 0.4574
- val_loss: 0.6937 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.5241 - loss: 0.6908 - val_accuracy: 0.4362
- val_loss: 0.6981 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.5277 - loss: 0.6878 - val_accuracy: 0.5851
- val_loss: 0.6904 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.6031 - loss: 0.6651 - val_accuracy: 0.6170
- val_loss: 0.6665 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.6514 - loss: 0.6308 - val_accuracy: 0.7128
- val_loss: 0.6025 - learning_rate: 0.0050
Epoch 13/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.6773 - loss: 0.6006 - val_accuracy: 0.7021
- val_loss: 0.5705 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7020 - loss: 0.5771 - val_accuracy: 0.6170
- val_loss: 0.6088 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.6620 - loss: 0.6125 - val_accuracy: 0.7021
- val_loss: 0.6006 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7126 - loss: 0.5673 - val_accuracy: 0.7128
- val_loss: 0.5972 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 36ms/step - accuracy: 0.7314 - loss: 0.5456 - val_accuracy: 0.7128
- val_loss: 0.5652 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7314 - loss: 0.5305 - val_accuracy: 0.7021
- val_loss: 0.5917 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7350 - loss: 0.5373 - val_accuracy: 0.7021
- val_loss: 0.6295 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.7079 - loss: 0.5658 - val_accuracy: 0.6915
- val_loss: 0.5686 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7397 - loss: 0.5317 - val_accuracy: 0.7447
- val_loss: 0.5254 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7468 - loss: 0.5188 - val_accuracy: 0.6915
- val_loss: 0.5251 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.7550 - loss: 0.5146 - val_accuracy: 0.7340
- val_loss: 0.5344 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.4823 - val_accuracy: 0.7447
- val_loss: 0.5513 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.7444 - loss: 0.5078 - val_accuracy: 0.7660
- val_loss: 0.5100 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.7597 - loss: 0.4972 - val_accuracy: 0.7447
- val_loss: 0.5236 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.7621 - loss: 0.4813 - val_accuracy: 0.7340
- val_loss: 0.5746 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.7644 - loss: 0.4678 - val_accuracy: 0.7021
- val_loss: 0.6318 - learning_rate: 0.0050
Epoch 29/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.7256 - loss: 0.5220 - val_accuracy: 0.7128
- val_loss: 0.5995 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7691 - loss: 0.4921 - val_accuracy: 0.7340
- val_loss: 0.5200 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.7680 - loss: 0.4801 - val_accuracy: 0.6915
- val_loss: 0.5956 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.4799 - val_accuracy: 0.7340
- val_loss: 0.5873 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.7797 - loss: 0.4618 - val_accuracy: 0.7553
- val_loss: 0.5829 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.7715 - loss: 0.4864 - val_accuracy: 0.6702
- val_loss: 0.5675 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 38ms/step - accuracy: 0.7597 - loss: 0.5028 - val_accuracy: 0.7660
- val_loss: 0.5087 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.7833 - loss: 0.4644 - val_accuracy: 0.7553
- val_loss: 0.5280 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.7939 - loss: 0.4582 - val_accuracy: 0.7234
- val_loss: 0.5735 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.7727 - loss: 0.4715 - val_accuracy: 0.7660
- val_loss: 0.5151 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.7821 - loss: 0.4440 - val_accuracy: 0.7234
- val_loss: 0.6865 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 38ms/step - accuracy: 0.7856 - loss: 0.4533 - val_accuracy: 0.7340
- val_loss: 0.5686 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.7986 - loss: 0.4459 - val_accuracy: 0.7553
- val_loss: 0.5332 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.7939 - loss: 0.4275 - val_accuracy: 0.7234
- val_loss: 0.6438 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.7797 - loss: 0.4587 - val_accuracy: 0.7872
- val_loss: 0.5565 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.7774 - loss: 0.5178 - val_accuracy: 0.7660
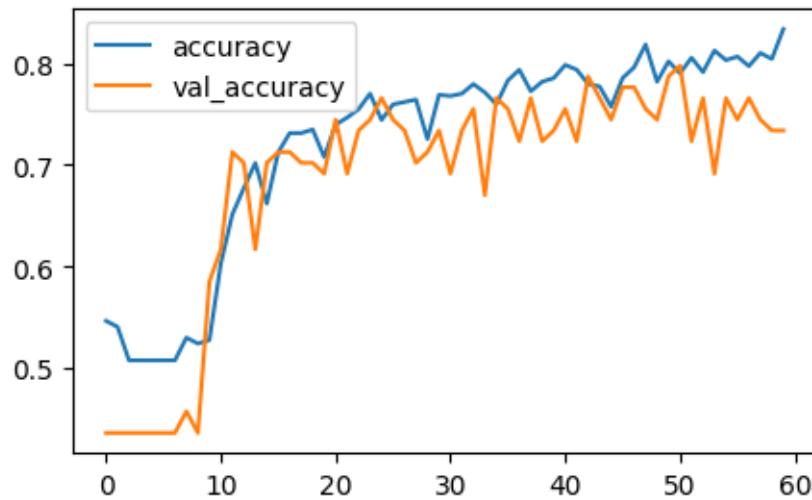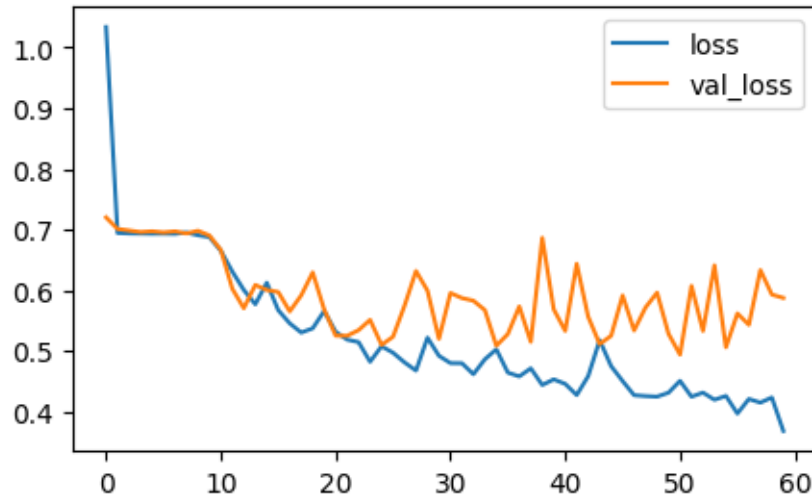- val_loss: 0.5114 - learning_rate: 0.0050
Epoch 45/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.7574 - loss: 0.4750 - val_accuracy: 0.7447
- val_loss: 0.5252 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 38ms/step - accuracy: 0.7856 - loss: 0.4505 - val_accuracy: 0.7766
- val_loss: 0.5916 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 38ms/step - accuracy: 0.7962 - loss: 0.4272 - val_accuracy: 0.7766
- val_loss: 0.5339 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8186 - loss: 0.4258 - val_accuracy: 0.7553
- val_loss: 0.5719 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.7821 - loss: 0.4248 - val_accuracy: 0.7447
- val_loss: 0.5962 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 38ms/step - accuracy: 0.8021 - loss: 0.4314 - val_accuracy: 0.7872
- val_loss: 0.5284 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 38ms/step - accuracy: 0.7903 - loss: 0.4509 - val_accuracy: 0.7979
- val_loss: 0.4940 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 38ms/step - accuracy: 0.8057 - loss: 0.4248 - val_accuracy: 0.7234
- val_loss: 0.6074 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.7915 - loss: 0.4315 - val_accuracy: 0.7660
- val_loss: 0.5330 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8127 - loss: 0.4197 - val_accuracy: 0.6915
- val_loss: 0.6412 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8033 - loss: 0.4260 - val_accuracy: 0.7660
- val_loss: 0.5062 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 38ms/step - accuracy: 0.8068 - loss: 0.3970 - val_accuracy: 0.7447
- val_loss: 0.5619 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.7974 - loss: 0.4210 - val_accuracy: 0.7660
- val_loss: 0.5432 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 36ms/step - accuracy: 0.8104 - loss: 0.4150 - val_accuracy: 0.7447
- val_loss: 0.6334 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8045 - loss: 0.4234 - val_accuracy: 0.7340
- val_loss: 0.5930 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8339 - loss: 0.3684 - val_accuracy: 0.7340
- val_loss: 0.5875 - learning_rate: 0.0050
```

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.save('my_model.keras')` or `keras.saving.save_model(model, 'my_model.keras')`.

Current validation accuracy: 0.7340425252914429
Resetting all weights…
Current number of trials: 13

['loss', 'compile_metrics']
3/3   0s 10ms/step –
accuracy: 0.6991 – loss: 0.6121

```
[0.587458610534668, 0.7340425252914429]
3/3              0s 21ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.67      0.78      0.72        41
        Male       0.80      0.70      0.75        53

    accuracy                           0.73        94
   macro avg       0.74      0.74      0.73        94
weighted avg       0.74      0.73      0.74        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.4794 - loss: 1.1797 - val_accuracy: 0.5638
- val_loss: 0.6901 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5289 - loss: 0.6927 - val_accuracy: 0.5957
- val_loss: 0.6902 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.5300 - loss: 0.6937 - val_accuracy: 0.6064
- val_loss: 0.6856 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.5819 - loss: 0.6847 - val_accuracy: 0.4468
- val_loss: 0.6914 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 38ms/step - accuracy: 0.5807 - loss: 0.6655 - val_accuracy: 0.5213
- val_loss: 0.7221 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.6749 - loss: 0.6179 - val_accuracy: 0.6489
- val_loss: 0.6535 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.6596 - loss: 0.6402 - val_accuracy: 0.6809
- val_loss: 0.6102 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.6749 - loss: 0.6048 - val_accuracy: 0.6702
- val_loss: 0.5516 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.6879 - loss: 0.5671 - val_accuracy: 0.7340
- val_loss: 0.5397 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7326 - loss: 0.5510 - val_accuracy: 0.7234
- val_loss: 0.5576 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.7232 - loss: 0.5478 - val_accuracy: 0.7447
```

```
- val_loss: 0.5694 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.7432 - loss: 0.5299 - val_accuracy: 0.7553
- val_loss: 0.5129 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.7385 - loss: 0.5224 - val_accuracy: 0.7553
- val_loss: 0.5285 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7515 - loss: 0.5160 - val_accuracy: 0.7553
- val_loss: 0.5981 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7574 - loss: 0.5086 - val_accuracy: 0.7447
- val_loss: 0.5044 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7562 - loss: 0.4968 - val_accuracy: 0.7340
- val_loss: 0.5980 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7609 - loss: 0.4793 - val_accuracy: 0.7447
- val_loss: 0.5558 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7527 - loss: 0.5007 - val_accuracy: 0.7234
- val_loss: 0.6216 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7574 - loss: 0.4836 - val_accuracy: 0.7234
- val_loss: 0.5812 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7715 - loss: 0.4807 - val_accuracy: 0.7340
- val_loss: 0.5387 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 38ms/step - accuracy: 0.7892 - loss: 0.4549 - val_accuracy: 0.7340
- val_loss: 0.5731 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 38ms/step - accuracy: 0.7750 - loss: 0.4885 - val_accuracy: 0.7234
- val_loss: 0.5807 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.7739 - loss: 0.4838 - val_accuracy: 0.7340
- val_loss: 0.6018 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7656 - loss: 0.4763 - val_accuracy: 0.6702
- val_loss: 0.6035 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7668 - loss: 0.4817 - val_accuracy: 0.7234
- val_loss: 0.6187 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.7739 - loss: 0.4627 - val_accuracy: 0.7234
- val_loss: 0.5710 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.7986 - loss: 0.4559 - val_accuracy: 0.6596
```

```
- val_loss: 0.6874 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.7986 - loss: 0.4490 - val_accuracy: 0.7128
- val_loss: 0.6021 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.8033 - loss: 0.4421 - val_accuracy: 0.7021
- val_loss: 0.6890 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7797 - loss: 0.4511 - val_accuracy: 0.6809
- val_loss: 0.6653 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.7845 - loss: 0.4492 - val_accuracy: 0.7340
- val_loss: 0.5425 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.7915 - loss: 0.4480 - val_accuracy: 0.7447
- val_loss: 0.6042 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.8080 - loss: 0.4264 - val_accuracy: 0.7234
- val_loss: 0.7186 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.8092 - loss: 0.4191 - val_accuracy: 0.7553
- val_loss: 0.5715 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.8033 - loss: 0.4225 - val_accuracy: 0.7340
- val_loss: 0.5853 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.8080 - loss: 0.4439 - val_accuracy: 0.7128
- val_loss: 0.5906 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 38ms/step - accuracy: 0.7797 - loss: 0.4532 - val_accuracy: 0.7872
- val_loss: 0.6159 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.8021 - loss: 0.4243 - val_accuracy: 0.7553
- val_loss: 0.6134 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.8127 - loss: 0.4053 - val_accuracy: 0.7234
- val_loss: 0.6547 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.8127 - loss: 0.4113 - val_accuracy: 0.7766
- val_loss: 0.5836 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.8186 - loss: 0.4028 - val_accuracy: 0.7553
- val_loss: 0.5765 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.7998 - loss: 0.4300 - val_accuracy: 0.7340
- val_loss: 0.7518 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.8045 - loss: 0.4102 - val_accuracy: 0.7340
```

```
- val_loss: 0.6066 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.8068 - loss: 0.4146 - val_accuracy: 0.7128
- val_loss: 0.6179 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8316 - loss: 0.3836 - val_accuracy: 0.7553
- val_loss: 0.6078 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 36ms/step - accuracy: 0.8339 - loss: 0.3671 - val_accuracy: 0.7234
- val_loss: 0.6537 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8163 - loss: 0.3910 - val_accuracy: 0.7128
- val_loss: 0.6924 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8304 - loss: 0.3825 - val_accuracy: 0.6809
- val_loss: 0.7264 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.8327 - loss: 0.3730 - val_accuracy: 0.6809
- val_loss: 0.6577 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8280 - loss: 0.3988 - val_accuracy: 0.7234
- val_loss: 0.6474 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.8304 - loss: 0.3676 - val_accuracy: 0.7340
- val_loss: 0.6690 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8339 - loss: 0.3790 - val_accuracy: 0.7447
- val_loss: 0.5645 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 38ms/step - accuracy: 0.8092 - loss: 0.3889 - val_accuracy: 0.7234
- val_loss: 0.5772 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 38ms/step - accuracy: 0.8245 - loss: 0.3831 - val_accuracy: 0.7021
- val_loss: 0.6156 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8386 - loss: 0.3585 - val_accuracy: 0.7021
- val_loss: 0.6472 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8410 - loss: 0.3760 - val_accuracy: 0.7234
- val_loss: 0.6070 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.8469 - loss: 0.3440 - val_accuracy: 0.7660
- val_loss: 0.6516 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8316 - loss: 0.3770 - val_accuracy: 0.7872
- val_loss: 0.5577 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8433 - loss: 0.3503 - val_accuracy: 0.7660
```

```
- val_loss: 0.5890 - learning_rate: 0.0050
Epoch 60/60
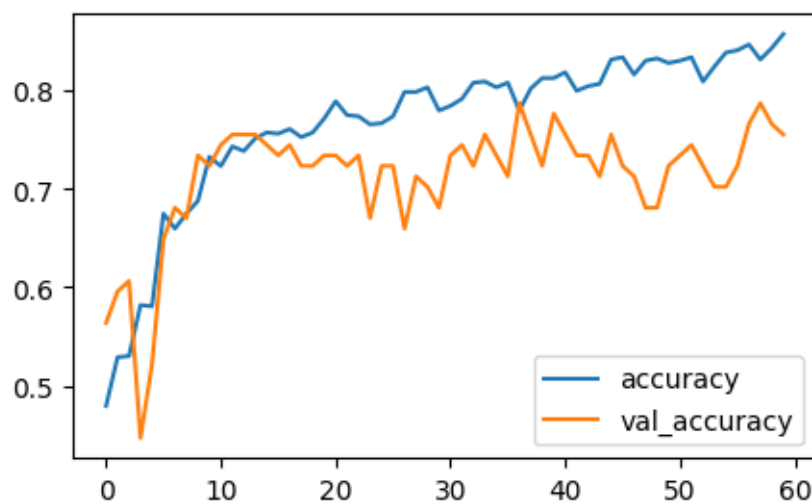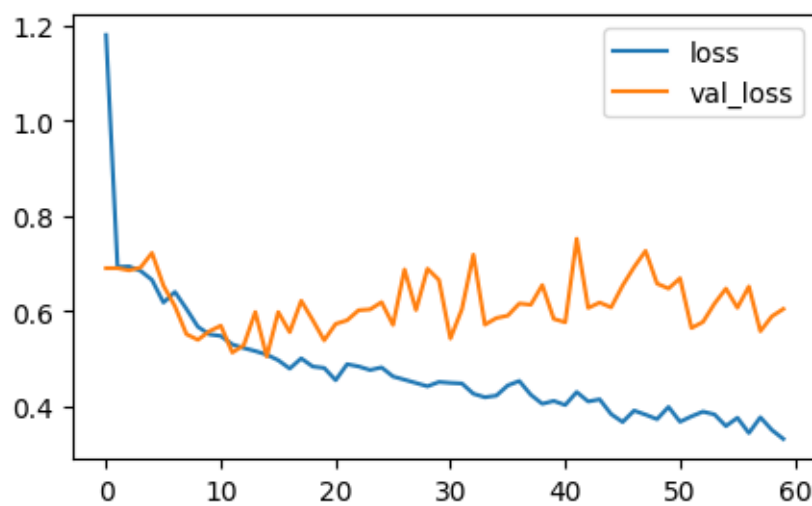27/27 - 1s - 36ms/step - accuracy: 0.8575 - loss: 0.3315 - val_accuracy: 0.7553
- val_loss: 0.6045 - learning_rate: 0.0050
```

```
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.
```

```
Current validation accuracy: 0.7553191781044006
Reseting all weights…
Current number of trials: 14
```

```
['loss', 'compile_metrics']
3/3                0s 10ms/step -
accuracy: 0.7566 - loss: 0.6482
[0.6044667959213257, 0.7553191781044006]
3/3                0s 22ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.75      0.66      0.70        41
        Male       0.76      0.83      0.79        53

    accuracy                           0.76        94
   macro avg       0.75      0.74      0.75        94
weighted avg       0.75      0.76      0.75        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5501 - loss: 0.8805 - val_accuracy: 0.5638
- val_loss: 0.6900 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5795 - loss: 0.6751 - val_accuracy: 0.4362
- val_loss: 0.7160 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.5689 - loss: 0.6774 - val_accuracy: 0.6702
- val_loss: 0.6781 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.6596 - loss: 0.6323 - val_accuracy: 0.6277
- val_loss: 0.6671 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.6655 - loss: 0.6169 - val_accuracy: 0.6170
- val_loss: 0.6351 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.6431 - loss: 0.6365 - val_accuracy: 0.6383
- val_loss: 0.6316 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.6796 - loss: 0.5906 - val_accuracy: 0.6809
- val_loss: 0.6033 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 38ms/step - accuracy: 0.6773 - loss: 0.5935 - val_accuracy: 0.7128
- val_loss: 0.5870 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.7185 - loss: 0.5678 - val_accuracy: 0.6809
- val_loss: 0.6422 - learning_rate: 0.0050
```

```
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7055 - loss: 0.5637 - val_accuracy: 0.6809
- val_loss: 0.5990 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7008 - loss: 0.5801 - val_accuracy: 0.6915
- val_loss: 0.5905 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.6914 - loss: 0.5897 - val_accuracy: 0.7021
- val_loss: 0.5744 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.7067 - loss: 0.5801 - val_accuracy: 0.7340
- val_loss: 0.5794 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.6773 - loss: 0.6122 - val_accuracy: 0.4362
- val_loss: 0.7494 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.4723 - loss: 0.7010 - val_accuracy: 0.4362
- val_loss: 0.7056 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.4971 - loss: 0.6951 - val_accuracy: 0.4362
- val_loss: 0.7021 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.4912 - loss: 0.6945 - val_accuracy: 0.4362
- val_loss: 0.6936 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.4817 - loss: 0.6940 - val_accuracy: 0.4362
- val_loss: 0.6938 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.4841 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.7040 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.4794 - loss: 0.6963 - val_accuracy: 0.5638
- val_loss: 0.6913 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.5029 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.4923 - loss: 0.6942 - val_accuracy: 0.4362
- val_loss: 0.7007 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6948 - val_accuracy: 0.4362
- val_loss: 0.6944 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 38ms/step - accuracy: 0.4935 - loss: 0.6943 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6943 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
```

```
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6937 - val_accuracy: 0.5638
- val_loss: 0.6918 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.4971 - loss: 0.6940 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6951 - val_accuracy: 0.4362
- val_loss: 0.6933 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.4853 - loss: 0.6949 - val_accuracy: 0.4362
- val_loss: 0.6974 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.4982 - loss: 0.6937 - val_accuracy: 0.5638
- val_loss: 0.6928 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.5147 - loss: 0.6941 - val_accuracy: 0.4362
- val_loss: 0.7004 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.4582 - loss: 0.6958 - val_accuracy: 0.4362
- val_loss: 0.7008 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6943 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.4876 - loss: 0.6946 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.7004 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6989 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.4853 - loss: 0.6937 - val_accuracy: 0.5638
- val_loss: 0.6928 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.5147 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6969 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.4770 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6972 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6941 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
```

```
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6935 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6944 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.4841 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6972 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6973 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.4935 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6944 - val_accuracy: 0.4362
- val_loss: 0.6938 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.4912 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6974 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6974 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6945 - learning_rate: 0.0050
```

```
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6938 - val_accuracy: 0.4362
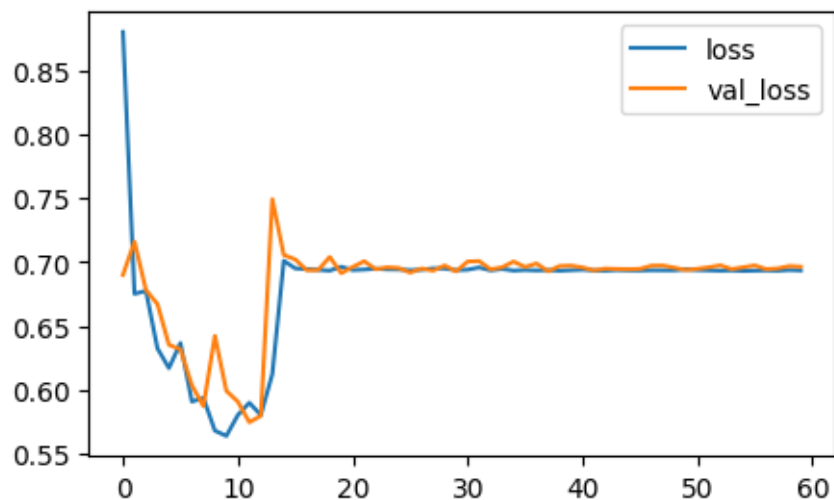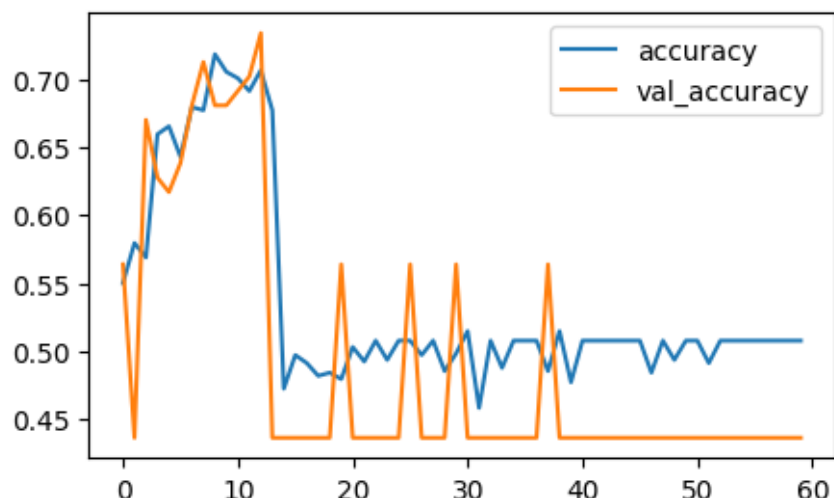- val_loss: 0.6969 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
```

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.save('my_model.keras')` or `keras.saving.save_model(model, 'my_model.keras')`.

```
Current validation accuracy: 0.43617022037506104
Reseting all weights…
Current number of trials: 15
```

```
['loss', 'compile_metrics']
3/3                Os 10ms/step -
accuracy: 0.4603 - loss: 0.6953
[0.6963930130004883, 0.43617022037506104]
3/3                Os 22ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.44      1.00      0.61        41
        Male       0.00      0.00      0.00        53

    accuracy                           0.44        94
   macro avg       0.22      0.50      0.30        94
weighted avg       0.19      0.44      0.26        94


Found 943 files belonging to 2 classes.
Using 849 files for training.

/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
```

```
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5183 - loss: 0.8124 - val_accuracy: 0.5532
- val_loss: 0.6902 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.6419 - loss: 0.6394 - val_accuracy: 0.6489
- val_loss: 0.6339 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.6584 - loss: 0.6144 - val_accuracy: 0.6277
- val_loss: 0.6465 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 38ms/step - accuracy: 0.6902 - loss: 0.5929 - val_accuracy: 0.6809
- val_loss: 0.6401 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 38ms/step - accuracy: 0.5665 - loss: 0.6828 - val_accuracy: 0.5745
- val_loss: 0.6592 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 38ms/step - accuracy: 0.6266 - loss: 0.6362 - val_accuracy: 0.5851
- val_loss: 0.6568 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 38ms/step - accuracy: 0.6784 - loss: 0.6108 - val_accuracy: 0.6170
- val_loss: 0.6792 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 38ms/step - accuracy: 0.6784 - loss: 0.6019 - val_accuracy: 0.5957
- val_loss: 0.6790 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 38ms/step - accuracy: 0.6726 - loss: 0.6034 - val_accuracy: 0.6489
- val_loss: 0.6478 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 38ms/step - accuracy: 0.6172 - loss: 0.6385 - val_accuracy: 0.4362
- val_loss: 0.7027 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 39ms/step - accuracy: 0.5088 - loss: 0.6938 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6939 - val_accuracy: 0.4362
- val_loss: 0.6969 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.5972 - loss: 0.6694 - val_accuracy: 0.6915
- val_loss: 0.6071 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 38ms/step - accuracy: 0.6832 - loss: 0.6062 - val_accuracy: 0.6170
- val_loss: 0.6485 - learning_rate: 0.0050
```

```
Epoch 15/60
27/27 - 1s - 38ms/step - accuracy: 0.6938 - loss: 0.5789 - val_accuracy: 0.6809
- val_loss: 0.6518 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.6726 - loss: 0.5931 - val_accuracy: 0.6702
- val_loss: 0.5597 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7385 - loss: 0.5523 - val_accuracy: 0.7447
- val_loss: 0.5205 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 38ms/step - accuracy: 0.7338 - loss: 0.5194 - val_accuracy: 0.7340
- val_loss: 0.5173 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 38ms/step - accuracy: 0.7362 - loss: 0.5393 - val_accuracy: 0.7021
- val_loss: 0.5183 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7102 - loss: 0.5524 - val_accuracy: 0.7234
- val_loss: 0.5544 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7314 - loss: 0.5262 - val_accuracy: 0.7340
- val_loss: 0.5194 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 38ms/step - accuracy: 0.7397 - loss: 0.5082 - val_accuracy: 0.7234
- val_loss: 0.5517 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 38ms/step - accuracy: 0.7468 - loss: 0.5074 - val_accuracy: 0.7660
- val_loss: 0.4873 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 38ms/step - accuracy: 0.7574 - loss: 0.4986 - val_accuracy: 0.7234
- val_loss: 0.5279 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7609 - loss: 0.4943 - val_accuracy: 0.7340
- val_loss: 0.5384 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.7597 - loss: 0.5042 - val_accuracy: 0.6915
- val_loss: 0.6213 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 39ms/step - accuracy: 0.7303 - loss: 0.5286 - val_accuracy: 0.7553
- val_loss: 0.5192 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 38ms/step - accuracy: 0.7409 - loss: 0.5468 - val_accuracy: 0.7340
- val_loss: 0.5491 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 38ms/step - accuracy: 0.7468 - loss: 0.5270 - val_accuracy: 0.7021
- val_loss: 0.5412 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 39ms/step - accuracy: 0.7562 - loss: 0.5154 - val_accuracy: 0.7021
- val_loss: 0.5343 - learning_rate: 0.0050
```

```
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.7656 - loss: 0.4893 - val_accuracy: 0.6809
- val_loss: 0.5781 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 38ms/step - accuracy: 0.7397 - loss: 0.5169 - val_accuracy: 0.7340
- val_loss: 0.5685 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 38ms/step - accuracy: 0.7739 - loss: 0.4797 - val_accuracy: 0.7128
- val_loss: 0.5559 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 38ms/step - accuracy: 0.7644 - loss: 0.4907 - val_accuracy: 0.7128
- val_loss: 0.5333 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.7797 - loss: 0.4575 - val_accuracy: 0.7660
- val_loss: 0.5173 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.7762 - loss: 0.4596 - val_accuracy: 0.7660
- val_loss: 0.5315 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 38ms/step - accuracy: 0.7962 - loss: 0.4433 - val_accuracy: 0.7128
- val_loss: 0.6292 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.7833 - loss: 0.4582 - val_accuracy: 0.7234
- val_loss: 0.5533 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.7856 - loss: 0.4628 - val_accuracy: 0.7447
- val_loss: 0.5108 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 38ms/step - accuracy: 0.7903 - loss: 0.4270 - val_accuracy: 0.7234
- val_loss: 0.5385 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 38ms/step - accuracy: 0.7809 - loss: 0.4539 - val_accuracy: 0.7447
- val_loss: 0.5075 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 38ms/step - accuracy: 0.7786 - loss: 0.4521 - val_accuracy: 0.7340
- val_loss: 0.5264 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 39ms/step - accuracy: 0.7880 - loss: 0.4421 - val_accuracy: 0.7340
- val_loss: 0.6753 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 38ms/step - accuracy: 0.7927 - loss: 0.4470 - val_accuracy: 0.7234
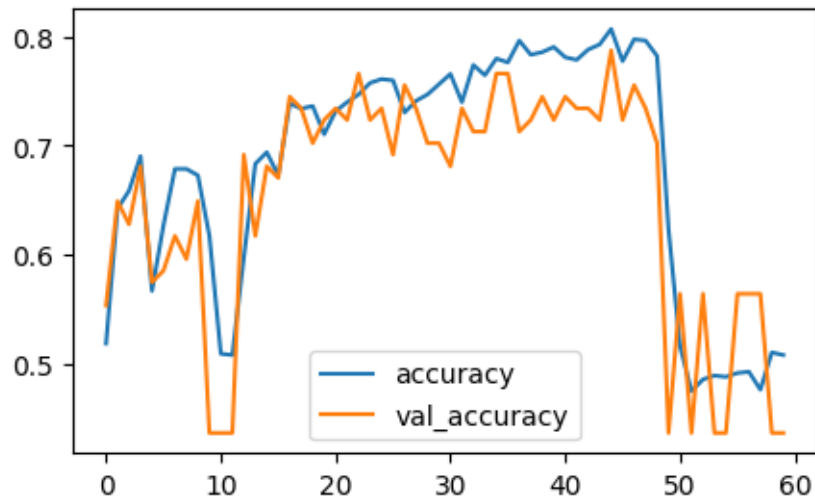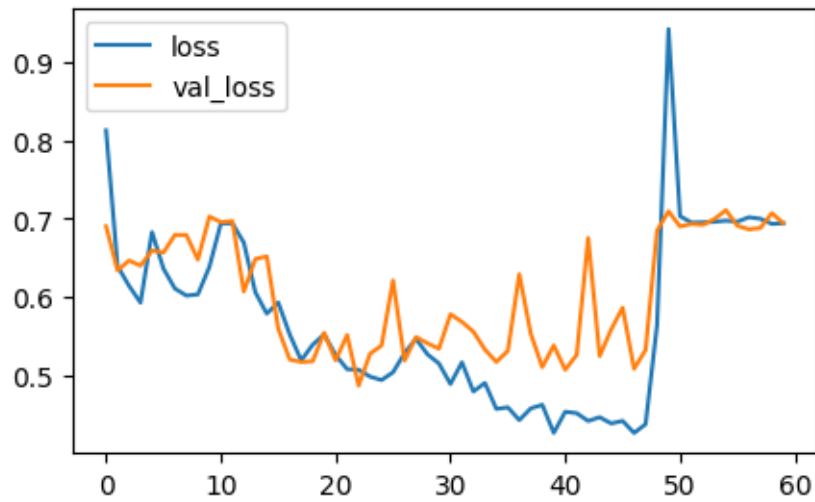- val_loss: 0.5248 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 38ms/step - accuracy: 0.8068 - loss: 0.4390 - val_accuracy: 0.7872
- val_loss: 0.5588 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 38ms/step - accuracy: 0.7774 - loss: 0.4423 - val_accuracy: 0.7234
- val_loss: 0.5865 - learning_rate: 0.0050
```

```
Epoch 47/60
27/27 - 1s - 38ms/step - accuracy: 0.7974 - loss: 0.4269 - val_accuracy: 0.7553
- val_loss: 0.5086 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 38ms/step - accuracy: 0.7962 - loss: 0.4380 - val_accuracy: 0.7340
- val_loss: 0.5326 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.7821 - loss: 0.5645 - val_accuracy: 0.7021
- val_loss: 0.6847 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 38ms/step - accuracy: 0.6231 - loss: 0.9415 - val_accuracy: 0.4362
- val_loss: 0.7093 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 38ms/step - accuracy: 0.5159 - loss: 0.7031 - val_accuracy: 0.5638
- val_loss: 0.6900 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.4747 - loss: 0.6948 - val_accuracy: 0.4362
- val_loss: 0.6932 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.4853 - loss: 0.6952 - val_accuracy: 0.5638
- val_loss: 0.6921 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.4888 - loss: 0.6959 - val_accuracy: 0.4362
- val_loss: 0.6995 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 36ms/step - accuracy: 0.4876 - loss: 0.6974 - val_accuracy: 0.4362
- val_loss: 0.7107 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 36ms/step - accuracy: 0.4912 - loss: 0.6961 - val_accuracy: 0.5638
- val_loss: 0.6908 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.4923 - loss: 0.7017 - val_accuracy: 0.5638
- val_loss: 0.6864 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 38ms/step - accuracy: 0.4759 - loss: 0.6998 - val_accuracy: 0.5638
- val_loss: 0.6880 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 38ms/step - accuracy: 0.5100 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.7069 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6941 - val_accuracy: 0.4362
- val_loss: 0.6941 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.
```

Current validation accuracy: 0.43617022037506104
Reseting all weights…
Current number of trials: 16


```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.4603 - loss: 0.6937
[0.6940582990646362, 0.43617022037506104]
3/3              0s 22ms/step
Classification Report:
             precision    recall  f1-score    support
```

```
      Female        0.44       1.00       0.61          41
        Male        0.00       0.00       0.00          53

    accuracy                              0.44          94
   macro avg        0.22       0.50       0.30          94
weighted avg        0.19       0.44       0.26          94
```

Found 943 files belonging to 2 classes.
Using 849 files for training.

2025-05-06 08:19:49.162462: I tensorflow/core/framework/local_rendezvous.cc:405]
Local rendezvous is aborting with status: OUT_OF_RANGE: End of sequence
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 62ms/step - accuracy: 0.5041 - loss: 0.8498 - val_accuracy: 0.5638
- val_loss: 0.6909 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.4723 - loss: 0.6941 - val_accuracy: 0.5638
- val_loss: 0.6928 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.5088 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.5194 - loss: 0.6927 - val_accuracy: 0.5851
- val_loss: 0.6880 - learning_rate: 0.0050
Epoch 7/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.5854 - loss: 0.6788 - val_accuracy: 0.5851
- val_loss: 0.6695 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.6137 - loss: 0.6619 - val_accuracy: 0.5426
- val_loss: 0.6814 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 36ms/step - accuracy: 0.5677 - loss: 0.6757 - val_accuracy: 0.6383
- val_loss: 0.6120 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.6631 - loss: 0.6250 - val_accuracy: 0.6277
- val_loss: 0.6169 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.6749 - loss: 0.6235 - val_accuracy: 0.7021
- val_loss: 0.5787 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.7126 - loss: 0.5757 - val_accuracy: 0.6809
- val_loss: 0.6551 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.6855 - loss: 0.5872 - val_accuracy: 0.6702
- val_loss: 0.6395 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.6902 - loss: 0.6031 - val_accuracy: 0.7766
- val_loss: 0.4916 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.7197 - loss: 0.5540 - val_accuracy: 0.7128
- val_loss: 0.5385 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7279 - loss: 0.5459 - val_accuracy: 0.6489
- val_loss: 0.6132 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7279 - loss: 0.5475 - val_accuracy: 0.7128
- val_loss: 0.5266 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7644 - loss: 0.5067 - val_accuracy: 0.7340
- val_loss: 0.4872 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7774 - loss: 0.4923 - val_accuracy: 0.7979
- val_loss: 0.4979 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.7703 - loss: 0.4735 - val_accuracy: 0.7872
- val_loss: 0.5190 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.7974 - loss: 0.4544 - val_accuracy: 0.7872
- val_loss: 0.4133 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4783 - val_accuracy: 0.7234
- val_loss: 0.5728 - learning_rate: 0.0050
Epoch 23/60
```

```
27/27 - 1s - 36ms/step - accuracy: 0.7762 - loss: 0.4736 - val_accuracy: 0.7234
- val_loss: 0.5180 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.8009 - loss: 0.4281 - val_accuracy: 0.7660
- val_loss: 0.4282 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.8009 - loss: 0.4358 - val_accuracy: 0.7766
- val_loss: 0.5121 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.8104 - loss: 0.3965 - val_accuracy: 0.7872
- val_loss: 0.4392 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.8080 - loss: 0.4082 - val_accuracy: 0.7766
- val_loss: 0.4470 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.8057 - loss: 0.4029 - val_accuracy: 0.7447
- val_loss: 0.5831 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.7397 - loss: 0.5566 - val_accuracy: 0.7234
- val_loss: 0.5793 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7903 - loss: 0.4652 - val_accuracy: 0.8085
- val_loss: 0.4121 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.8257 - loss: 0.3902 - val_accuracy: 0.8085
- val_loss: 0.4135 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.8057 - loss: 0.4285 - val_accuracy: 0.8085
- val_loss: 0.4961 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.8104 - loss: 0.4167 - val_accuracy: 0.8298
- val_loss: 0.3863 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.8233 - loss: 0.3942 - val_accuracy: 0.8404
- val_loss: 0.4491 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.8575 - loss: 0.3626 - val_accuracy: 0.7766
- val_loss: 0.3958 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.8481 - loss: 0.3724 - val_accuracy: 0.7553
- val_loss: 0.5155 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.8481 - loss: 0.3639 - val_accuracy: 0.7979
- val_loss: 0.3968 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.8292 - loss: 0.3811 - val_accuracy: 0.7766
- val_loss: 0.3750 - learning_rate: 0.0050
Epoch 39/60
```

```
27/27 - 1s - 38ms/step - accuracy: 0.8563 - loss: 0.3417 - val_accuracy: 0.7979
- val_loss: 0.3564 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.8539 - loss: 0.3436 - val_accuracy: 0.8404
- val_loss: 0.3771 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.8528 - loss: 0.3403 - val_accuracy: 0.7660
- val_loss: 0.4518 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.8634 - loss: 0.3127 - val_accuracy: 0.7553
- val_loss: 0.4217 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 36ms/step - accuracy: 0.8716 - loss: 0.3026 - val_accuracy: 0.8298
- val_loss: 0.3593 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.8716 - loss: 0.2931 - val_accuracy: 0.8085
- val_loss: 0.3765 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.8693 - loss: 0.2848 - val_accuracy: 0.8404
- val_loss: 0.3991 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 38ms/step - accuracy: 0.8657 - loss: 0.3232 - val_accuracy: 0.8085
- val_loss: 0.4676 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8669 - loss: 0.2839 - val_accuracy: 0.8191
- val_loss: 0.4889 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8740 - loss: 0.2957 - val_accuracy: 0.8298
- val_loss: 0.4156 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.8528 - loss: 0.3436 - val_accuracy: 0.8723
- val_loss: 0.3141 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.8681 - loss: 0.2833 - val_accuracy: 0.8298
- val_loss: 0.4170 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.8751 - loss: 0.2809 - val_accuracy: 0.8298
- val_loss: 0.4251 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.8975 - loss: 0.2488 - val_accuracy: 0.8298
- val_loss: 0.4777 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8916 - loss: 0.2596 - val_accuracy: 0.8723
- val_loss: 0.3843 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.8693 - loss: 0.3099 - val_accuracy: 0.8298
- val_loss: 0.4459 - learning_rate: 0.0050
Epoch 55/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.8928 - loss: 0.2676 - val_accuracy: 0.8723
- val_loss: 0.3353 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.9022 - loss: 0.2335 - val_accuracy: 0.8085
- val_loss: 0.4287 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.9058 - loss: 0.2432 - val_accuracy: 0.8511
- val_loss: 0.3009 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 36ms/step - accuracy: 0.8940 - loss: 0.2550 - val_accuracy: 0.7979
- val_loss: 0.4861 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.8857 - loss: 0.2579 - val_accuracy: 0.7766
- val_loss: 0.4630 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.9034 - loss: 0.2466 - val_accuracy: 0.7872
- val_loss: 0.5455 - learning_rate: 0.0050
```

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

```
Current validation accuracy: 0.7872340679168701
Reseting all weights…
Current number of trials: 17
```
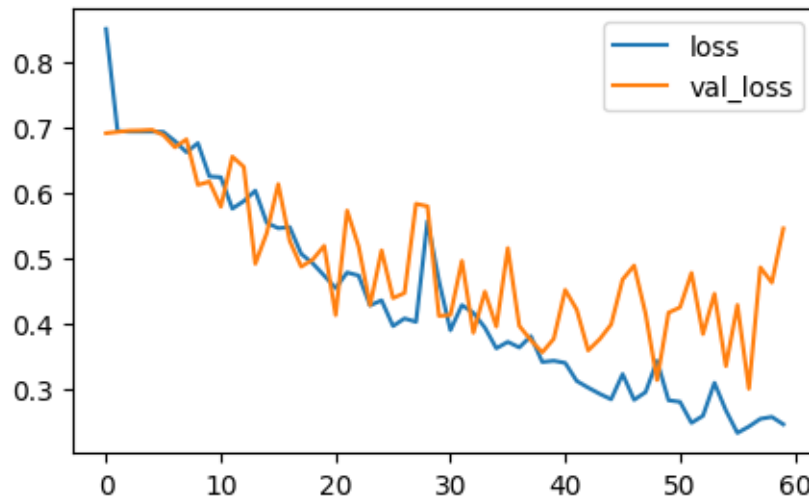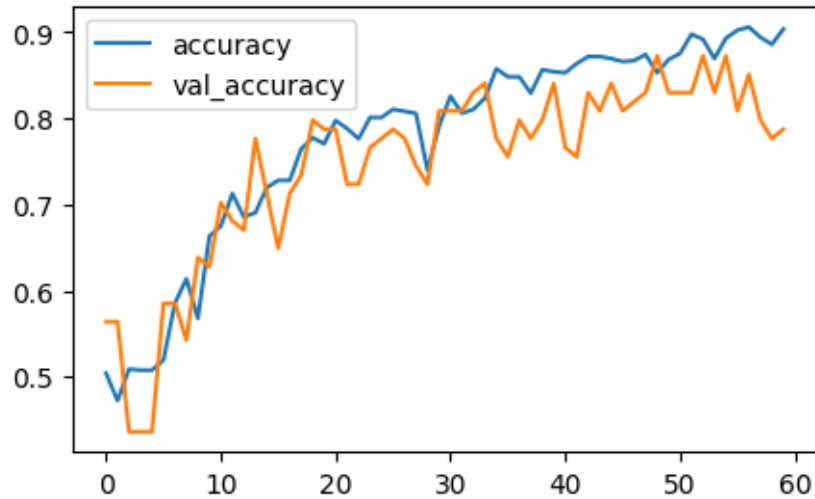
```
['loss', 'compile_metrics']
3/3                 0s 11ms/step -
accuracy: 0.7960 - loss: 0.5635
[0.5454614162445068, 0.7872340679168701]
3/3                 0s 22ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.71      0.85      0.78        41
        Male       0.87      0.74      0.80        53

    accuracy                           0.79        94
   macro avg       0.79      0.79      0.79        94
weighted avg       0.80      0.79      0.79        94

Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 68ms/step - accuracy: 0.4782 - loss: 0.7878 - val_accuracy: 0.5638
- val_loss: 0.6893 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.4865 - loss: 0.6939 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6943 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6930 - val_accuracy: 0.4362
```

```
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6969 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
```

```
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
```

```
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6968 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
```
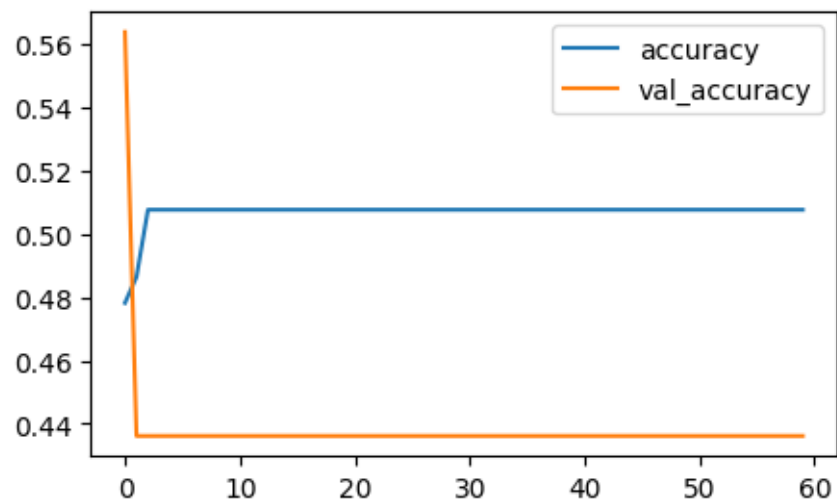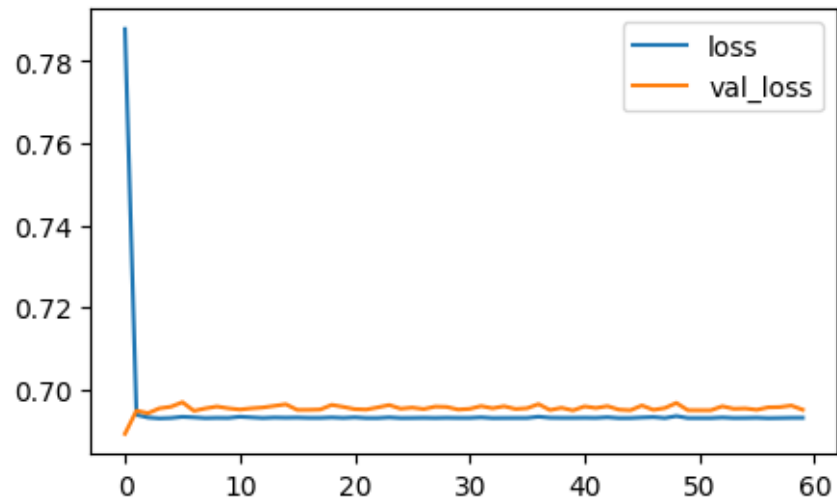
```
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.43617022037506104
Reseting all weights…
Current number of trials: 18
```

```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.4603 - loss: 0.6944
[0.6951111555099487, 0.43617022037506104]
3/3              0s 21ms/step
Classification Report:
             precision    recall  f1-score   support

     Female      0.44      1.00      0.61        41
       Male      0.00      0.00      0.00        53

   accuracy                          0.44        94
```

```
    macro avg       0.22      0.50      0.30        94
weighted avg        0.19      0.44      0.26        94


Found 943 files belonging to 2 classes.
Using 849 files for training.

/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 60ms/step - accuracy: 0.5277 - loss: 0.7940 - val_accuracy: 0.5213
- val_loss: 0.7454 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.6007 - loss: 0.6607 - val_accuracy: 0.6489
- val_loss: 0.6797 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.6667 - loss: 0.6374 - val_accuracy: 0.5957
- val_loss: 0.6563 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.6996 - loss: 0.5944 - val_accuracy: 0.6596
- val_loss: 0.5986 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 36ms/step - accuracy: 0.6985 - loss: 0.5782 - val_accuracy: 0.6489
- val_loss: 0.6326 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.7032 - loss: 0.5622 - val_accuracy: 0.7128
- val_loss: 0.5327 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.6973 - loss: 0.5662 - val_accuracy: 0.7128
- val_loss: 0.5497 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.7362 - loss: 0.5307 - val_accuracy: 0.7234
- val_loss: 0.5468 - learning_rate: 0.0050
Epoch 9/60
```

```
27/27 - 1s - 36ms/step - accuracy: 0.7161 - loss: 0.5618 - val_accuracy: 0.7234
- val_loss: 0.5865 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.7150 - loss: 0.5579 - val_accuracy: 0.7021
- val_loss: 0.5516 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7479 - loss: 0.5343 - val_accuracy: 0.7021
- val_loss: 0.5562 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.7385 - loss: 0.5238 - val_accuracy: 0.7128
- val_loss: 0.6090 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.7456 - loss: 0.5303 - val_accuracy: 0.7234
- val_loss: 0.5745 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 36ms/step - accuracy: 0.7350 - loss: 0.5327 - val_accuracy: 0.7128
- val_loss: 0.5697 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.7161 - loss: 0.5662 - val_accuracy: 0.7128
- val_loss: 0.5638 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 36ms/step - accuracy: 0.7373 - loss: 0.5357 - val_accuracy: 0.7234
- val_loss: 0.5273 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 36ms/step - accuracy: 0.7185 - loss: 0.5456 - val_accuracy: 0.7340
- val_loss: 0.5464 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7362 - loss: 0.5132 - val_accuracy: 0.7128
- val_loss: 0.5512 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7562 - loss: 0.5115 - val_accuracy: 0.6702
- val_loss: 0.6102 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 38ms/step - accuracy: 0.7468 - loss: 0.5337 - val_accuracy: 0.7128
- val_loss: 0.5542 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7420 - loss: 0.5203 - val_accuracy: 0.6915
- val_loss: 0.5699 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 38ms/step - accuracy: 0.7279 - loss: 0.5217 - val_accuracy: 0.7021
- val_loss: 0.5704 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.7432 - loss: 0.5070 - val_accuracy: 0.6915
- val_loss: 0.5644 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7515 - loss: 0.5176 - val_accuracy: 0.7234
- val_loss: 0.5506 - learning_rate: 0.0050
Epoch 25/60
```

```
27/27 - 1s - 36ms/step - accuracy: 0.7633 - loss: 0.4912 - val_accuracy: 0.7234
- val_loss: 0.5640 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.7597 - loss: 0.4926 - val_accuracy: 0.7128
- val_loss: 0.5588 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.7856 - loss: 0.4719 - val_accuracy: 0.7021
- val_loss: 0.6428 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.7385 - loss: 0.5128 - val_accuracy: 0.6702
- val_loss: 0.6277 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.7468 - loss: 0.5212 - val_accuracy: 0.7340
- val_loss: 0.5863 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 36ms/step - accuracy: 0.7574 - loss: 0.5038 - val_accuracy: 0.6809
- val_loss: 0.5827 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.7515 - loss: 0.5037 - val_accuracy: 0.7340
- val_loss: 0.5706 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.8009 - loss: 0.4543 - val_accuracy: 0.7128
- val_loss: 0.5996 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.7621 - loss: 0.4904 - val_accuracy: 0.7128
- val_loss: 0.5498 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.7774 - loss: 0.4941 - val_accuracy: 0.7340
- val_loss: 0.5592 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.7644 - loss: 0.4962 - val_accuracy: 0.6915
- val_loss: 0.5409 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 38ms/step - accuracy: 0.7892 - loss: 0.4392 - val_accuracy: 0.6702
- val_loss: 0.6031 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.7762 - loss: 0.4771 - val_accuracy: 0.6702
- val_loss: 0.6587 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.7974 - loss: 0.4533 - val_accuracy: 0.6809
- val_loss: 0.5601 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.7962 - loss: 0.4532 - val_accuracy: 0.7234
- val_loss: 0.5546 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 36ms/step - accuracy: 0.7868 - loss: 0.4725 - val_accuracy: 0.7447
- val_loss: 0.5256 - learning_rate: 0.0050
Epoch 41/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.7998 - loss: 0.4310 - val_accuracy: 0.7660
- val_loss: 0.5163 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.7786 - loss: 0.4653 - val_accuracy: 0.7234
- val_loss: 0.6302 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.7750 - loss: 0.4772 - val_accuracy: 0.7340
- val_loss: 0.6238 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.7762 - loss: 0.4826 - val_accuracy: 0.7234
- val_loss: 0.5650 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8021 - loss: 0.4336 - val_accuracy: 0.7660
- val_loss: 0.6230 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 36ms/step - accuracy: 0.8021 - loss: 0.4384 - val_accuracy: 0.8191
- val_loss: 0.4758 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 36ms/step - accuracy: 0.7503 - loss: 0.5014 - val_accuracy: 0.7340
- val_loss: 0.5040 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.7998 - loss: 0.4571 - val_accuracy: 0.7872
- val_loss: 0.5100 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.7821 - loss: 0.4536 - val_accuracy: 0.7766
- val_loss: 0.4771 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8033 - loss: 0.4244 - val_accuracy: 0.5957
- val_loss: 1.9923 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.7668 - loss: 0.5101 - val_accuracy: 0.7766
- val_loss: 0.5179 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 38ms/step - accuracy: 0.7739 - loss: 0.4531 - val_accuracy: 0.7128
- val_loss: 0.5552 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.8104 - loss: 0.4114 - val_accuracy: 0.7340
- val_loss: 0.5585 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.8163 - loss: 0.4056 - val_accuracy: 0.7447
- val_loss: 0.5106 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8174 - loss: 0.3925 - val_accuracy: 0.7872
- val_loss: 0.6728 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8186 - loss: 0.3990 - val_accuracy: 0.7553
- val_loss: 0.5683 - learning_rate: 0.0050
Epoch 57/60
```

```
27/27 - 1s - 37ms/step - accuracy: 0.7797 - loss: 0.4409 - val_accuracy: 0.7872
- val_loss: 0.4923 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8127 - loss: 0.4014 - val_accuracy: 0.7766
- val_loss: 0.4726 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.8327 - loss: 0.3987 - val_accuracy: 0.7766
- val_loss: 0.4707 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8092 - loss: 0.4213 - val_accuracy: 0.7660
- val_loss: 0.5785 - learning_rate: 0.0050
```

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.save('my_model.keras')` or `keras.saving.save_model(model, 'my_model.keras')`.

```
Current validation accuracy: 0.7659574747085571
Reseting all weights…
Current number of trials: 19
```
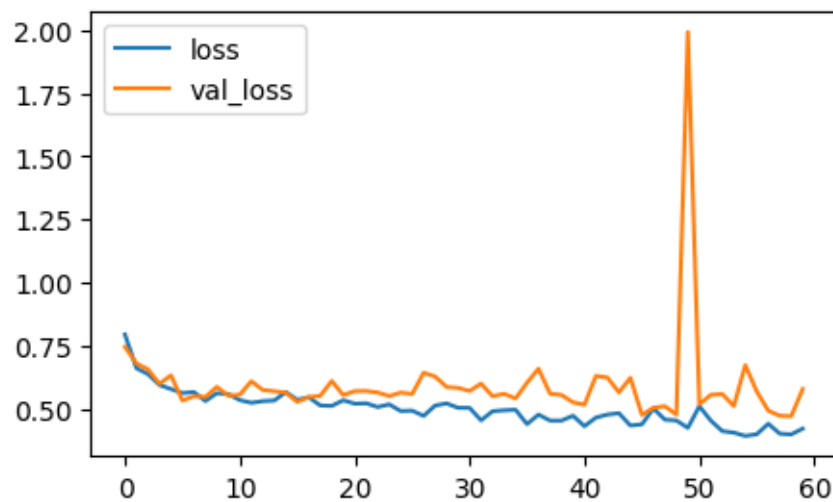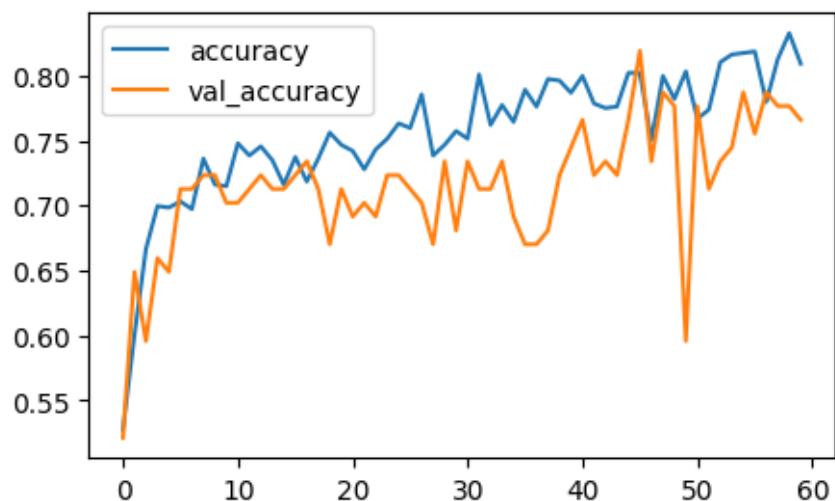
```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.7502 - loss: 0.6245
[0.5785139799118042, 0.7659574747085571]
3/3              0s 22ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.69      0.83      0.76        41
        Male       0.84      0.72      0.78        53

    accuracy                           0.77        94
   macro avg       0.77      0.77      0.77        94
weighted avg       0.78      0.77      0.77        94

Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5289 - loss: 0.9905 - val_accuracy: 0.5851
- val_loss: 0.6509 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5889 - loss: 0.6835 - val_accuracy: 0.5745
- val_loss: 0.6529 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.5300 - loss: 0.6839 - val_accuracy: 0.5638
- val_loss: 0.6918 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.4829 - loss: 0.6933 - val_accuracy: 0.4468
```

```
- val_loss: 0.6936 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.5112 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.5760 - loss: 0.6852 - val_accuracy: 0.6064
- val_loss: 0.6902 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 38ms/step - accuracy: 0.6031 - loss: 0.6836 - val_accuracy: 0.6170
- val_loss: 0.6656 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.6113 - loss: 0.6674 - val_accuracy: 0.4681
- val_loss: 0.7134 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.5324 - loss: 0.7029 - val_accuracy: 0.5745
- val_loss: 0.6750 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.6007 - loss: 0.6597 - val_accuracy: 0.5532
- val_loss: 0.6708 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.6113 - loss: 0.6579 - val_accuracy: 0.6383
- val_loss: 0.6770 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.5724 - loss: 0.6781 - val_accuracy: 0.4574
- val_loss: 0.7005 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6904 - val_accuracy: 0.5532
- val_loss: 0.6867 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.5536 - loss: 0.6745 - val_accuracy: 0.5532
- val_loss: 0.6647 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.6360 - loss: 0.6337 - val_accuracy: 0.6915
- val_loss: 0.6205 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 36ms/step - accuracy: 0.6690 - loss: 0.6201 - val_accuracy: 0.7234
- val_loss: 0.5701 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.6996 - loss: 0.5778 - val_accuracy: 0.6702
- val_loss: 0.6554 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.6961 - loss: 0.5786 - val_accuracy: 0.7340
- val_loss: 0.5962 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7303 - loss: 0.5476 - val_accuracy: 0.7340
- val_loss: 0.6264 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7479 - loss: 0.5255 - val_accuracy: 0.7553
```

```
- val_loss: 0.5179 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7585 - loss: 0.5265 - val_accuracy: 0.8085
- val_loss: 0.4581 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 38ms/step - accuracy: 0.7173 - loss: 0.5695 - val_accuracy: 0.6702
- val_loss: 0.5983 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 38ms/step - accuracy: 0.7409 - loss: 0.5260 - val_accuracy: 0.7766
- val_loss: 0.5122 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7797 - loss: 0.4801 - val_accuracy: 0.7660
- val_loss: 0.6264 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7574 - loss: 0.5173 - val_accuracy: 0.8191
- val_loss: 0.4548 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.7762 - loss: 0.4696 - val_accuracy: 0.7553
- val_loss: 0.5214 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.7998 - loss: 0.4498 - val_accuracy: 0.8191
- val_loss: 0.4428 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.8080 - loss: 0.4304 - val_accuracy: 0.8298
- val_loss: 0.4133 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.8233 - loss: 0.3828 - val_accuracy: 0.7660
- val_loss: 0.7102 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.8068 - loss: 0.4273 - val_accuracy: 0.8298
- val_loss: 0.4058 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.8457 - loss: 0.3893 - val_accuracy: 0.8085
- val_loss: 0.4402 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.8210 - loss: 0.3657 - val_accuracy: 0.8298
- val_loss: 0.4452 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.8269 - loss: 0.4368 - val_accuracy: 0.7660
- val_loss: 0.6243 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.7974 - loss: 0.4375 - val_accuracy: 0.7979
- val_loss: 0.4784 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.8386 - loss: 0.4078 - val_accuracy: 0.8085
- val_loss: 0.4370 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.8327 - loss: 0.3709 - val_accuracy: 0.7766
```

```
- val_loss: 0.5035 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.8339 - loss: 0.3464 - val_accuracy: 0.8085
- val_loss: 0.4029 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.8398 - loss: 0.3846 - val_accuracy: 0.8511
- val_loss: 0.3943 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.8221 - loss: 0.3850 - val_accuracy: 0.7979
- val_loss: 0.4462 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.8528 - loss: 0.3279 - val_accuracy: 0.8085
- val_loss: 0.5864 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.8657 - loss: 0.3237 - val_accuracy: 0.8298
- val_loss: 0.4163 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.8740 - loss: 0.3013 - val_accuracy: 0.8511
- val_loss: 0.3827 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.8716 - loss: 0.2997 - val_accuracy: 0.8191
- val_loss: 0.4363 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.8693 - loss: 0.2934 - val_accuracy: 0.7766
- val_loss: 0.5585 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8810 - loss: 0.2912 - val_accuracy: 0.8723
- val_loss: 0.3379 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8740 - loss: 0.2974 - val_accuracy: 0.8191
- val_loss: 0.4430 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8940 - loss: 0.2681 - val_accuracy: 0.8298
- val_loss: 0.4611 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8963 - loss: 0.2535 - val_accuracy: 0.8404
- val_loss: 0.3661 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.8893 - loss: 0.2676 - val_accuracy: 0.8191
- val_loss: 0.4435 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8987 - loss: 0.2314 - val_accuracy: 0.8298
- val_loss: 0.3047 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 38ms/step - accuracy: 0.9081 - loss: 0.2429 - val_accuracy: 0.8298
- val_loss: 0.4303 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.9011 - loss: 0.2303 - val_accuracy: 0.8085
```

```
- val_loss: 0.4434 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.9034 - loss: 0.2483 - val_accuracy: 0.8404
- val_loss: 0.5586 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8846 - loss: 0.2794 - val_accuracy: 0.8191
- val_loss: 0.4722 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 38ms/step - accuracy: 0.8763 - loss: 0.2730 - val_accuracy: 0.8404
- val_loss: 0.4550 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.9058 - loss: 0.2200 - val_accuracy: 0.8404
- val_loss: 0.5098 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.9046 - loss: 0.2228 - val_accuracy: 0.8085
- val_loss: 0.4466 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8928 - loss: 0.2469 - val_accuracy: 0.8617
- val_loss: 0.4102 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.9093 - loss: 0.2240 - val_accuracy: 0.8298
- val_loss: 0.4752 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8975 - loss: 0.2330 - val_accuracy: 0.8191
- val_loss: 0.4804 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.8191489577293396
Reseting all weights…
Current number of trials: 20
```
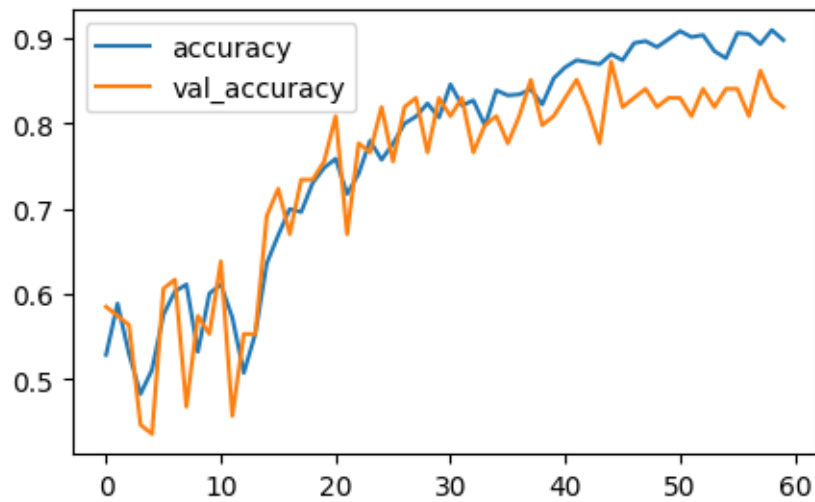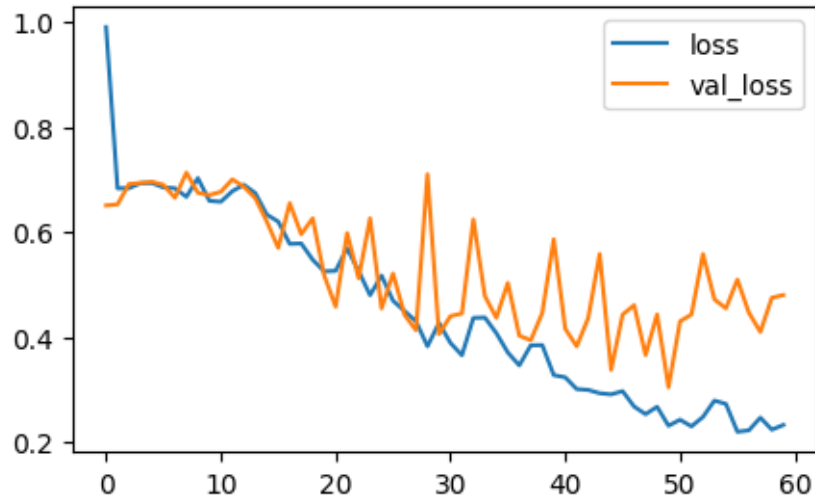
```
['loss', 'compile_metrics']
3/3              0s 11ms/step -
accuracy: 0.8080 - loss: 0.5903
[0.480370432138443, 0.8191489577293396]
3/3              0s 22ms/step
Classification Report:
              precision    recall  f1-score    support

      Female       0.77      0.83      0.80         41
        Male       0.86      0.81      0.83         53

    accuracy                           0.82         94
```

```
   macro avg       0.82      0.82      0.82         94
weighted avg       0.82      0.82      0.82         94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5324 - loss: 1.5625 - val_accuracy: 0.6596
- val_loss: 0.6281 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.6313 - loss: 0.6393 - val_accuracy: 0.4362
- val_loss: 0.6978 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.5453 - loss: 0.6830 - val_accuracy: 0.4362
- val_loss: 0.7139 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.5006 - loss: 0.6989 - val_accuracy: 0.4362
- val_loss: 0.6974 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6901 - val_accuracy: 0.4362
- val_loss: 0.6922 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.5041 - loss: 0.6999 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.4900 - loss: 0.6928 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.5124 - loss: 0.6920 - val_accuracy: 0.5000
- val_loss: 0.7652 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.5512 - loss: 0.6797 - val_accuracy: 0.5957
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 38ms/step - accuracy: 0.6160 - loss: 0.6842 - val_accuracy: 0.5106
- val_loss: 0.6806 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.6572 - loss: 0.6474 - val_accuracy: 0.6383
- val_loss: 0.6335 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.6455 - loss: 0.6321 - val_accuracy: 0.7021
- val_loss: 0.6370 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.6949 - loss: 0.5995 - val_accuracy: 0.6702
- val_loss: 0.6055 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 36ms/step - accuracy: 0.7114 - loss: 0.5698 - val_accuracy: 0.7021
```

```
- val_loss: 0.6092 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7550 - loss: 0.5249 - val_accuracy: 0.6915
- val_loss: 0.6058 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 36ms/step - accuracy: 0.7373 - loss: 0.5329 - val_accuracy: 0.7447
- val_loss: 0.5541 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7102 - loss: 0.5486 - val_accuracy: 0.7660
- val_loss: 0.5381 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7491 - loss: 0.5151 - val_accuracy: 0.7660
- val_loss: 0.5200 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.4897 - val_accuracy: 0.7234
- val_loss: 0.5198 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7562 - loss: 0.5155 - val_accuracy: 0.6915
- val_loss: 0.5716 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.7503 - loss: 0.5355 - val_accuracy: 0.7447
- val_loss: 0.5190 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7550 - loss: 0.5138 - val_accuracy: 0.7553
- val_loss: 0.5067 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.7644 - loss: 0.4758 - val_accuracy: 0.7553
- val_loss: 0.4799 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7691 - loss: 0.4788 - val_accuracy: 0.7234
- val_loss: 0.6070 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.7903 - loss: 0.4708 - val_accuracy: 0.7766
- val_loss: 0.4881 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 38ms/step - accuracy: 0.7939 - loss: 0.4588 - val_accuracy: 0.7447
- val_loss: 0.5501 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.7691 - loss: 0.4940 - val_accuracy: 0.7872
- val_loss: 0.5026 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.7515 - loss: 0.5097 - val_accuracy: 0.6915
- val_loss: 0.5114 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.7503 - loss: 0.5096 - val_accuracy: 0.6809
- val_loss: 0.5101 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7809 - loss: 0.4634 - val_accuracy: 0.7340
```

```
- val_loss: 0.5107 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.7986 - loss: 0.4151 - val_accuracy: 0.7766
- val_loss: 0.4787 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.7809 - loss: 0.4592 - val_accuracy: 0.7979
- val_loss: 0.4751 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.7774 - loss: 0.4689 - val_accuracy: 0.7979
- val_loss: 0.4972 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.7786 - loss: 0.4562 - val_accuracy: 0.7766
- val_loss: 0.5063 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.8033 - loss: 0.4346 - val_accuracy: 0.7979
- val_loss: 0.4835 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.8245 - loss: 0.4112 - val_accuracy: 0.7872
- val_loss: 0.4541 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.8139 - loss: 0.4226 - val_accuracy: 0.7340
- val_loss: 0.5859 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.8021 - loss: 0.4319 - val_accuracy: 0.7447
- val_loss: 0.5005 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.8198 - loss: 0.4112 - val_accuracy: 0.7979
- val_loss: 0.5680 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.8257 - loss: 0.4083 - val_accuracy: 0.8191
- val_loss: 0.4464 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.8280 - loss: 0.3909 - val_accuracy: 0.7872
- val_loss: 0.5101 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 38ms/step - accuracy: 0.8174 - loss: 0.3865 - val_accuracy: 0.7660
- val_loss: 0.5340 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.8433 - loss: 0.3715 - val_accuracy: 0.7660
- val_loss: 0.4741 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.8327 - loss: 0.3570 - val_accuracy: 0.7766
- val_loss: 0.4756 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 38ms/step - accuracy: 0.8292 - loss: 0.3817 - val_accuracy: 0.7660
- val_loss: 0.5449 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8539 - loss: 0.3307 - val_accuracy: 0.7447
```

```
- val_loss: 0.4981 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8351 - loss: 0.3644 - val_accuracy: 0.8298
- val_loss: 0.4119 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8457 - loss: 0.3361 - val_accuracy: 0.7979
- val_loss: 0.4703 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.8351 - loss: 0.3674 - val_accuracy: 0.7766
- val_loss: 0.5029 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8481 - loss: 0.3428 - val_accuracy: 0.8298
- val_loss: 0.4447 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.8587 - loss: 0.3131 - val_accuracy: 0.7872
- val_loss: 0.5222 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8481 - loss: 0.3337 - val_accuracy: 0.8404
- val_loss: 0.4420 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8787 - loss: 0.3153 - val_accuracy: 0.7979
- val_loss: 0.4438 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8763 - loss: 0.2916 - val_accuracy: 0.8298
- val_loss: 0.4237 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8657 - loss: 0.3070 - val_accuracy: 0.8404
- val_loss: 0.3765 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8657 - loss: 0.3225 - val_accuracy: 0.7872
- val_loss: 0.4939 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8598 - loss: 0.2920 - val_accuracy: 0.8298
- val_loss: 0.4103 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 38ms/step - accuracy: 0.8787 - loss: 0.2966 - val_accuracy: 0.7872
- val_loss: 0.4901 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8763 - loss: 0.3040 - val_accuracy: 0.8191
- val_loss: 0.4471 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8751 - loss: 0.2919 - val_accuracy: 0.7660
- val_loss: 0.4745 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
```
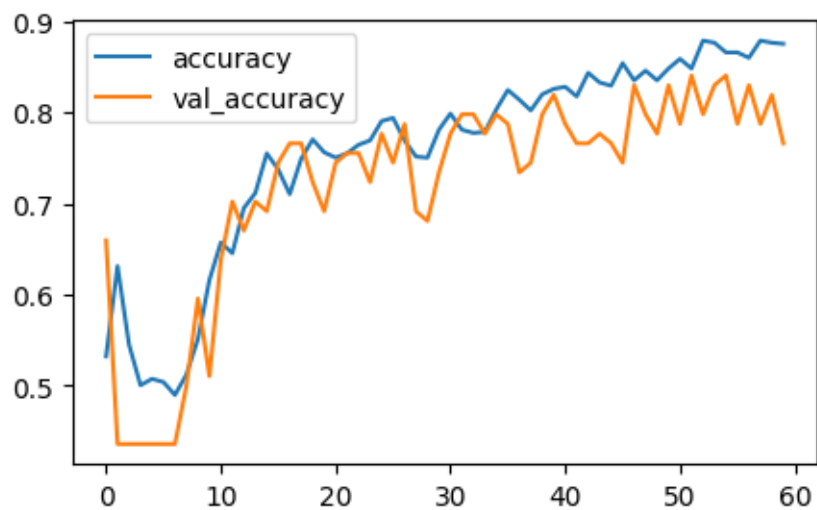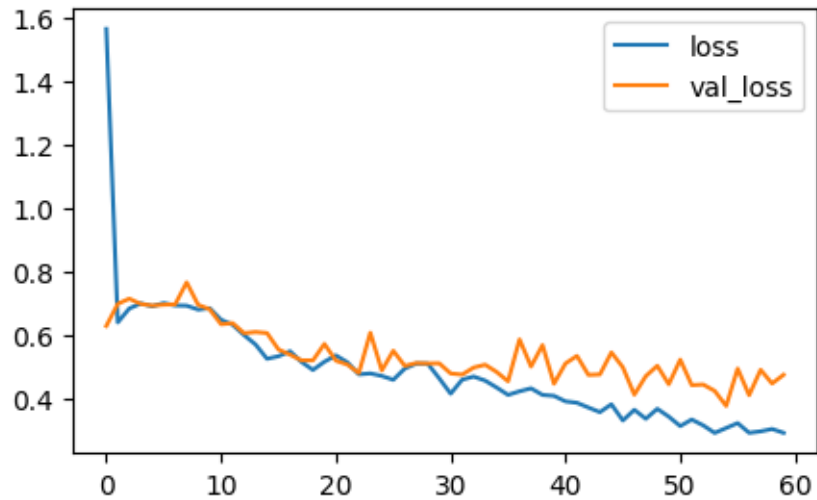
```
'my_model.keras')`.
```

Current validation accuracy: 0.7659574747085571
Reseting all weights…
Current number of trials: 21


```
['loss', 'compile_metrics']
3/3                0s 10ms/step -
accuracy: 0.7463 - loss: 0.5299
[0.4744609594345093, 0.7659574747085571]
3/3                0s 22ms/step
Classification Report:
              precision    recall  f1-score    support
```

```
      Female        0.74      0.71      0.72          41
        Male        0.78      0.81      0.80          53

    accuracy                            0.77          94
   macro avg        0.76      0.76      0.76          94
weighted avg        0.77      0.77      0.77          94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 60ms/step - accuracy: 0.5253 - loss: 0.9787 - val_accuracy: 0.5638
- val_loss: 0.6893 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.4923 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.5995 - loss: 0.6706 - val_accuracy: 0.6915
- val_loss: 0.6241 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.6302 - loss: 0.6399 - val_accuracy: 0.4574
- val_loss: 0.7114 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.6773 - loss: 0.6170 - val_accuracy: 0.7021
- val_loss: 0.5844 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.6926 - loss: 0.5900 - val_accuracy: 0.7872
- val_loss: 0.5227 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.6985 - loss: 0.5906 - val_accuracy: 0.7234
- val_loss: 0.5695 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.6961 - loss: 0.5789 - val_accuracy: 0.7234
- val_loss: 0.5812 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.6714 - loss: 0.5932 - val_accuracy: 0.7979
- val_loss: 0.5137 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7185 - loss: 0.5649 - val_accuracy: 0.7660
- val_loss: 0.5033 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7173 - loss: 0.5752 - val_accuracy: 0.7766
- val_loss: 0.4687 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.6949 - loss: 0.5582 - val_accuracy: 0.8191
- val_loss: 0.4610 - learning_rate: 0.0050
```

```
Epoch 13/60
27/27 - 1s - 39ms/step - accuracy: 0.7138 - loss: 0.5575 - val_accuracy: 0.8085
- val_loss: 0.4708 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7314 - loss: 0.5441 - val_accuracy: 0.7660
- val_loss: 0.5204 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7185 - loss: 0.5428 - val_accuracy: 0.8191
- val_loss: 0.4551 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7232 - loss: 0.5439 - val_accuracy: 0.7553
- val_loss: 0.4749 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7220 - loss: 0.5605 - val_accuracy: 0.7979
- val_loss: 0.4849 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7303 - loss: 0.5355 - val_accuracy: 0.5851
- val_loss: 1.0616 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 36ms/step - accuracy: 0.6855 - loss: 0.6021 - val_accuracy: 0.7660
- val_loss: 0.5213 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7326 - loss: 0.5263 - val_accuracy: 0.8085
- val_loss: 0.4455 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7362 - loss: 0.5237 - val_accuracy: 0.5638
- val_loss: 0.6905 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7538 - loss: 0.5290 - val_accuracy: 0.7447
- val_loss: 0.4210 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.7668 - loss: 0.4911 - val_accuracy: 0.8511
- val_loss: 0.3634 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7715 - loss: 0.4740 - val_accuracy: 0.7766
- val_loss: 0.4514 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7515 - loss: 0.5090 - val_accuracy: 0.7553
- val_loss: 0.5194 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.7432 - loss: 0.5175 - val_accuracy: 0.7766
- val_loss: 0.5326 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.7338 - loss: 0.5241 - val_accuracy: 0.7766
- val_loss: 0.4412 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.7362 - loss: 0.5345 - val_accuracy: 0.7766
- val_loss: 0.4761 - learning_rate: 0.0050
```

```
Epoch 29/60
27/27 - 1s - 39ms/step - accuracy: 0.7774 - loss: 0.4786 - val_accuracy: 0.8085
- val_loss: 0.4339 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4539 - val_accuracy: 0.7766
- val_loss: 0.4177 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.7562 - loss: 0.4574 - val_accuracy: 0.7979
- val_loss: 0.4174 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.7962 - loss: 0.4314 - val_accuracy: 0.7660
- val_loss: 0.4753 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.7998 - loss: 0.4388 - val_accuracy: 0.8404
- val_loss: 0.3912 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.7974 - loss: 0.4042 - val_accuracy: 0.8191
- val_loss: 0.4253 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.8045 - loss: 0.4280 - val_accuracy: 0.8298
- val_loss: 0.3913 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.7691 - loss: 0.4740 - val_accuracy: 0.6702
- val_loss: 0.5455 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4564 - val_accuracy: 0.7872
- val_loss: 0.3906 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.8068 - loss: 0.4069 - val_accuracy: 0.8191
- val_loss: 0.3766 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4426 - val_accuracy: 0.8404
- val_loss: 0.4158 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 38ms/step - accuracy: 0.7856 - loss: 0.4591 - val_accuracy: 0.8617
- val_loss: 0.3879 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.8009 - loss: 0.4361 - val_accuracy: 0.8404
- val_loss: 0.4065 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.7998 - loss: 0.4036 - val_accuracy: 0.9043
- val_loss: 0.3075 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.8280 - loss: 0.3776 - val_accuracy: 0.8511
- val_loss: 0.3592 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.8233 - loss: 0.3787 - val_accuracy: 0.7872
- val_loss: 0.4854 - learning_rate: 0.0050
```

```
Epoch 45/60
27/27 - 1s - 38ms/step - accuracy: 0.8245 - loss: 0.4169 - val_accuracy: 0.8617
- val_loss: 0.3138 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8045 - loss: 0.4209 - val_accuracy: 0.8191
- val_loss: 0.4819 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8174 - loss: 0.3928 - val_accuracy: 0.8511
- val_loss: 0.4322 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8375 - loss: 0.3631 - val_accuracy: 0.8191
- val_loss: 0.4468 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.8186 - loss: 0.3995 - val_accuracy: 0.8404
- val_loss: 0.4262 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.7856 - loss: 0.4468 - val_accuracy: 0.8298
- val_loss: 0.4552 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.8210 - loss: 0.3841 - val_accuracy: 0.8404
- val_loss: 0.3418 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8327 - loss: 0.4041 - val_accuracy: 0.7979
- val_loss: 0.4670 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8304 - loss: 0.3763 - val_accuracy: 0.8723
- val_loss: 0.3946 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8339 - loss: 0.3607 - val_accuracy: 0.8511
- val_loss: 0.3586 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8233 - loss: 0.4023 - val_accuracy: 0.8298
- val_loss: 0.3733 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8351 - loss: 0.3644 - val_accuracy: 0.8191
- val_loss: 0.4541 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8104 - loss: 0.4074 - val_accuracy: 0.8191
- val_loss: 0.4603 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8233 - loss: 0.4002 - val_accuracy: 0.7766
- val_loss: 0.5010 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8304 - loss: 0.3714 - val_accuracy: 0.7979
- val_loss: 0.4722 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8233 - loss: 0.4104 - val_accuracy: 0.8511
- val_loss: 0.4373 - learning_rate: 0.0050
```

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or `keras.saving.save_model(model)`. This file format is considered legacy. We recommend using instead the native Keras format, e.g. `model.save('my_model.keras')` or `keras.saving.save_model(model, 'my_model.keras')`.

Current validation accuracy: 0.8510638475418091
Reseting all weights…
Current number of trials: 22
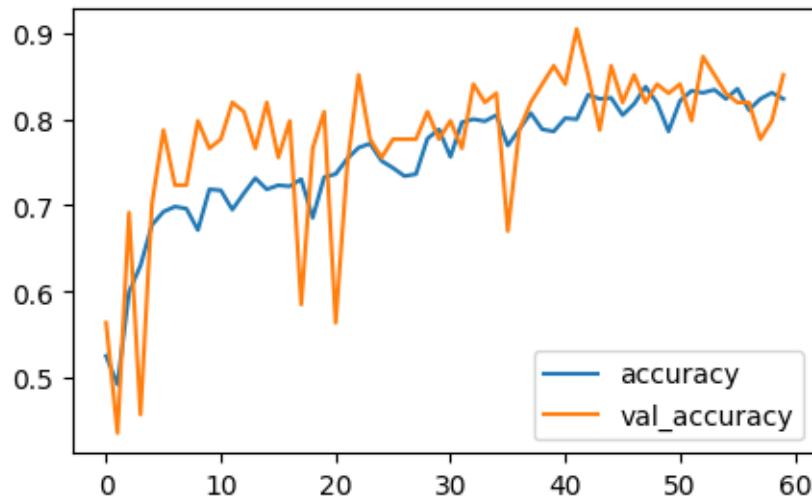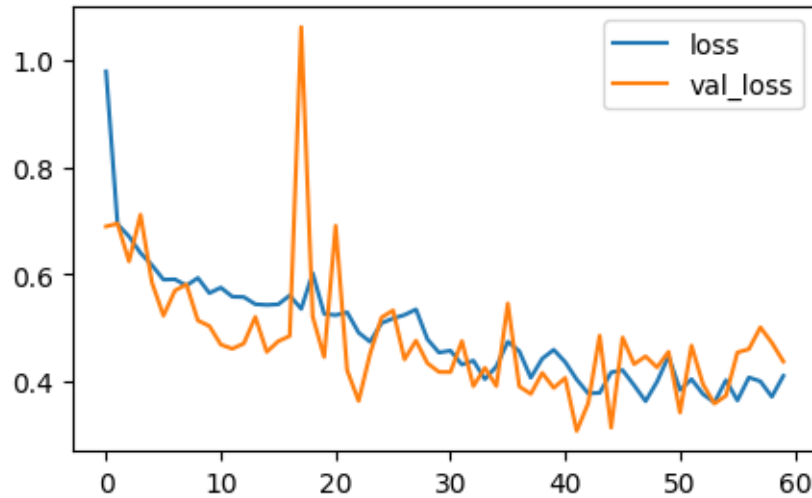
['loss', 'compile_metrics']
3/3   0s 10ms/step –
accuracy: 0.8318 - loss: 0.4616

```
[0.43729108572006226, 0.8510638475418091]
3/3              0s 21ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.75      0.98      0.85        41
        Male       0.98      0.75      0.85        53

    accuracy                           0.85        94
   macro avg       0.87      0.87      0.85        94
weighted avg       0.88      0.85      0.85        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.4912 - loss: 0.9062 - val_accuracy: 0.5106
- val_loss: 0.6925 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5300 - loss: 0.6891 - val_accuracy: 0.5745
- val_loss: 0.6805 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6113 - loss: 0.6687 - val_accuracy: 0.5851
- val_loss: 0.6926 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.5135 - loss: 0.6857 - val_accuracy: 0.5638
- val_loss: 0.6935 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.6337 - loss: 0.6358 - val_accuracy: 0.7128
- val_loss: 0.5698 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.6160 - loss: 0.6466 - val_accuracy: 0.5745
- val_loss: 0.6614 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.6678 - loss: 0.6180 - val_accuracy: 0.7021
- val_loss: 0.6041 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.6537 - loss: 0.6040 - val_accuracy: 0.6064
- val_loss: 0.6580 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.6867 - loss: 0.5976 - val_accuracy: 0.7553
- val_loss: 0.4920 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7138 - loss: 0.5577 - val_accuracy: 0.7979
- val_loss: 0.4897 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7126 - loss: 0.5510 - val_accuracy: 0.7766
```

```
- val_loss: 0.4884 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.7350 - loss: 0.5496 - val_accuracy: 0.7340
- val_loss: 0.4890 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.7456 - loss: 0.5272 - val_accuracy: 0.7766
- val_loss: 0.4962 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7291 - loss: 0.5429 - val_accuracy: 0.7553
- val_loss: 0.5042 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7562 - loss: 0.5108 - val_accuracy: 0.7872
- val_loss: 0.4602 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 38ms/step - accuracy: 0.7609 - loss: 0.5056 - val_accuracy: 0.7553
- val_loss: 0.4596 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7715 - loss: 0.4880 - val_accuracy: 0.7660
- val_loss: 0.4411 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7727 - loss: 0.4913 - val_accuracy: 0.7447
- val_loss: 0.4574 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7456 - loss: 0.5090 - val_accuracy: 0.7872
- val_loss: 0.4709 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7515 - loss: 0.5026 - val_accuracy: 0.7872
- val_loss: 0.6102 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7479 - loss: 0.5035 - val_accuracy: 0.7872
- val_loss: 0.5332 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7550 - loss: 0.4928 - val_accuracy: 0.8191
- val_loss: 0.4723 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.7621 - loss: 0.4836 - val_accuracy: 0.8191
- val_loss: 0.4407 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7750 - loss: 0.4638 - val_accuracy: 0.7766
- val_loss: 0.5519 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7468 - loss: 0.5399 - val_accuracy: 0.7447
- val_loss: 0.4907 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.4813 - val_accuracy: 0.8085
- val_loss: 0.4860 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4530 - val_accuracy: 0.7766
```

```
- val_loss: 0.4809 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.7939 - loss: 0.4362 - val_accuracy: 0.7340
- val_loss: 0.4946 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.7962 - loss: 0.4471 - val_accuracy: 0.7979
- val_loss: 0.4836 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7491 - loss: 0.5054 - val_accuracy: 0.7979
- val_loss: 0.5025 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.7656 - loss: 0.4787 - val_accuracy: 0.7021
- val_loss: 0.5237 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 38ms/step - accuracy: 0.7786 - loss: 0.4836 - val_accuracy: 0.7872
- val_loss: 0.4940 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.7821 - loss: 0.4622 - val_accuracy: 0.7766
- val_loss: 0.4490 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.7786 - loss: 0.4774 - val_accuracy: 0.7447
- val_loss: 0.5463 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.7892 - loss: 0.4207 - val_accuracy: 0.7979
- val_loss: 0.4808 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.7797 - loss: 0.4591 - val_accuracy: 0.7979
- val_loss: 0.5054 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.7915 - loss: 0.4342 - val_accuracy: 0.7766
- val_loss: 0.4220 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.7998 - loss: 0.4293 - val_accuracy: 0.7128
- val_loss: 0.5489 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.8033 - loss: 0.4334 - val_accuracy: 0.7340
- val_loss: 0.5445 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4510 - val_accuracy: 0.8298
- val_loss: 0.5106 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.8068 - loss: 0.4289 - val_accuracy: 0.6915
- val_loss: 0.5511 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4457 - val_accuracy: 0.8404
- val_loss: 0.3809 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.8198 - loss: 0.3989 - val_accuracy: 0.7872
```

- val_loss: 0.5228 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.7703 - loss: 0.4649 - val_accuracy: 0.7447
- val_loss: 0.4710 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8115 - loss: 0.4140 - val_accuracy: 0.7979
- val_loss: 0.4498 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8033 - loss: 0.4243 - val_accuracy: 0.7340
- val_loss: 0.5636 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.7939 - loss: 0.4368 - val_accuracy: 0.7553
- val_loss: 0.4955 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 38ms/step - accuracy: 0.7880 - loss: 0.4433 - val_accuracy: 0.7766
- val_loss: 0.4885 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.8292 - loss: 0.3768 - val_accuracy: 0.7979
- val_loss: 0.4905 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4325 - val_accuracy: 0.7872
- val_loss: 0.4516 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.8292 - loss: 0.3738 - val_accuracy: 0.7979
- val_loss: 0.4201 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8339 - loss: 0.3531 - val_accuracy: 0.7766
- val_loss: 0.4929 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8198 - loss: 0.3921 - val_accuracy: 0.8191
- val_loss: 0.4242 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8351 - loss: 0.3655 - val_accuracy: 0.8085
- val_loss: 0.4275 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8151 - loss: 0.4169 - val_accuracy: 0.8404
- val_loss: 0.5075 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8174 - loss: 0.4394 - val_accuracy: 0.7660
- val_loss: 0.5122 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8245 - loss: 0.3888 - val_accuracy: 0.7766
- val_loss: 0.5864 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8233 - loss: 0.3908 - val_accuracy: 0.7872
- val_loss: 0.4043 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8257 - loss: 0.3719 - val_accuracy: 0.8298

```
- val_loss: 0.4510 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8092 - loss: 0.4094 - val_accuracy: 0.8085
- val_loss: 0.4534 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.8085106611251831
Reseting all weights…
Current number of trials: 23
```
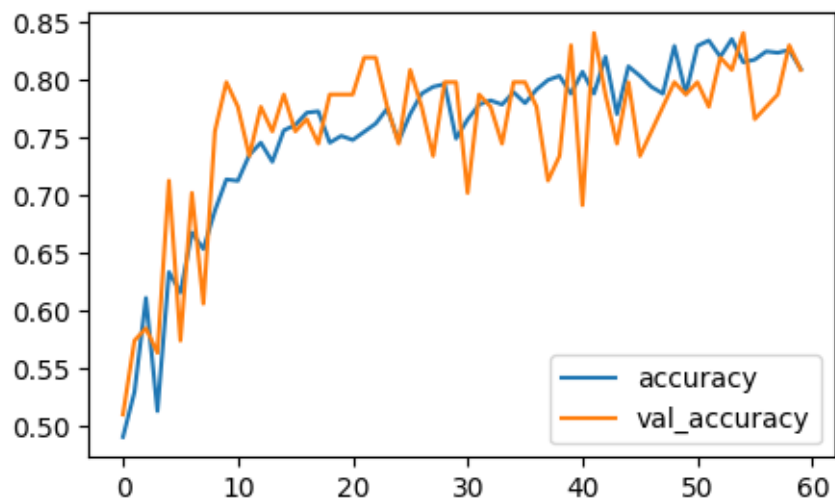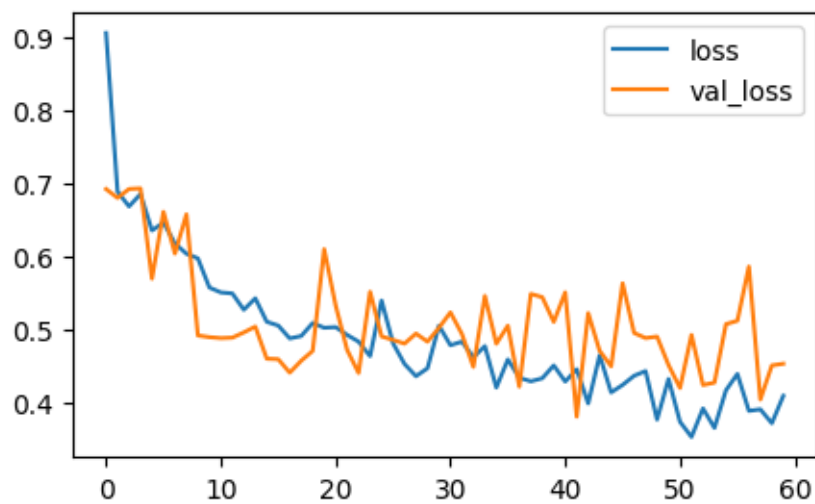
```
['loss', 'compile_metrics']
3/3                0s 9ms/step -
accuracy: 0.7636 - loss: 0.4984
[0.45338407158851624, 0.8085106611251831]
3/3                0s 21ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.70      0.98      0.82        41
        Male       0.97      0.68      0.80        53

    accuracy                           0.81        94
   macro avg       0.84      0.83      0.81        94
weighted avg       0.85      0.81      0.81        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 67ms/step - accuracy: 0.5289 - loss: 0.9604 - val_accuracy: 0.5426
- val_loss: 0.6904 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.5701 - loss: 0.6851 - val_accuracy: 0.6596
- val_loss: 0.6597 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.6726 - loss: 0.6183 - val_accuracy: 0.6809
- val_loss: 0.5842 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.6996 - loss: 0.5921 - val_accuracy: 0.6489
- val_loss: 0.6244 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 36ms/step - accuracy: 0.7173 - loss: 0.5707 - val_accuracy: 0.6809
- val_loss: 0.6370 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.7256 - loss: 0.5765 - val_accuracy: 0.7553
- val_loss: 0.5531 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.7244 - loss: 0.5514 - val_accuracy: 0.7340
- val_loss: 0.5817 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.7491 - loss: 0.5202 - val_accuracy: 0.7234
- val_loss: 0.5879 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 36ms/step - accuracy: 0.7373 - loss: 0.5446 - val_accuracy: 0.7234
- val_loss: 0.5732 - learning_rate: 0.0050
```

```
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7150 - loss: 0.5698 - val_accuracy: 0.7447
- val_loss: 0.5880 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.7503 - loss: 0.5248 - val_accuracy: 0.7234
- val_loss: 0.5489 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.7444 - loss: 0.5232 - val_accuracy: 0.7340
- val_loss: 0.5726 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.7727 - loss: 0.4894 - val_accuracy: 0.7766
- val_loss: 0.5503 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 36ms/step - accuracy: 0.7338 - loss: 0.5352 - val_accuracy: 0.7553
- val_loss: 0.5406 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.7420 - loss: 0.5294 - val_accuracy: 0.6596
- val_loss: 0.6567 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7314 - loss: 0.5359 - val_accuracy: 0.7234
- val_loss: 0.6547 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 36ms/step - accuracy: 0.7786 - loss: 0.4811 - val_accuracy: 0.7340
- val_loss: 0.5421 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7821 - loss: 0.4799 - val_accuracy: 0.7660
- val_loss: 0.5008 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 38ms/step - accuracy: 0.7727 - loss: 0.4703 - val_accuracy: 0.7340
- val_loss: 0.5450 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7856 - loss: 0.4484 - val_accuracy: 0.7340
- val_loss: 0.5675 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.7597 - loss: 0.5049 - val_accuracy: 0.7340
- val_loss: 0.4297 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 36ms/step - accuracy: 0.7986 - loss: 0.4536 - val_accuracy: 0.7340
- val_loss: 0.5903 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.7715 - loss: 0.4939 - val_accuracy: 0.7128
- val_loss: 0.4710 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7868 - loss: 0.4561 - val_accuracy: 0.7872
- val_loss: 0.4464 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.7762 - loss: 0.4811 - val_accuracy: 0.7553
- val_loss: 0.5542 - learning_rate: 0.0050
```

```
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.7915 - loss: 0.4824 - val_accuracy: 0.7766
- val_loss: 0.6036 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.7962 - loss: 0.4436 - val_accuracy: 0.7660
- val_loss: 0.4748 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.8080 - loss: 0.4200 - val_accuracy: 0.7447
- val_loss: 0.4760 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.8057 - loss: 0.4202 - val_accuracy: 0.7872
- val_loss: 0.5306 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 36ms/step - accuracy: 0.8021 - loss: 0.4407 - val_accuracy: 0.7340
- val_loss: 0.6149 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.7974 - loss: 0.4452 - val_accuracy: 0.7872
- val_loss: 0.5088 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.8104 - loss: 0.4086 - val_accuracy: 0.8191
- val_loss: 0.3955 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.8292 - loss: 0.3841 - val_accuracy: 0.8298
- val_loss: 0.3793 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.8375 - loss: 0.3761 - val_accuracy: 0.8404
- val_loss: 0.3532 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 38ms/step - accuracy: 0.8221 - loss: 0.3950 - val_accuracy: 0.8511
- val_loss: 0.3412 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.8351 - loss: 0.3694 - val_accuracy: 0.8830
- val_loss: 0.3524 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.8292 - loss: 0.3533 - val_accuracy: 0.8404
- val_loss: 0.4172 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.8481 - loss: 0.3378 - val_accuracy: 0.8511
- val_loss: 0.3219 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 36ms/step - accuracy: 0.8575 - loss: 0.3591 - val_accuracy: 0.8191
- val_loss: 0.4330 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 36ms/step - accuracy: 0.8551 - loss: 0.3408 - val_accuracy: 0.8723
- val_loss: 0.3210 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.8575 - loss: 0.3343 - val_accuracy: 0.8404
- val_loss: 0.4211 - learning_rate: 0.0050
```

```
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.8410 - loss: 0.3438 - val_accuracy: 0.8191
- val_loss: 0.5026 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 36ms/step - accuracy: 0.8587 - loss: 0.3587 - val_accuracy: 0.8085
- val_loss: 0.3452 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.8528 - loss: 0.3562 - val_accuracy: 0.8085
- val_loss: 0.3899 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8645 - loss: 0.3188 - val_accuracy: 0.8191
- val_loss: 0.3781 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 36ms/step - accuracy: 0.8681 - loss: 0.3129 - val_accuracy: 0.8298
- val_loss: 0.4136 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 36ms/step - accuracy: 0.8587 - loss: 0.3450 - val_accuracy: 0.8404
- val_loss: 0.3427 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8563 - loss: 0.3176 - val_accuracy: 0.7553
- val_loss: 0.5547 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.8598 - loss: 0.3461 - val_accuracy: 0.8511
- val_loss: 0.4131 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.8787 - loss: 0.2985 - val_accuracy: 0.8191
- val_loss: 0.4188 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 38ms/step - accuracy: 0.8481 - loss: 0.3505 - val_accuracy: 0.8404
- val_loss: 0.3911 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.8751 - loss: 0.3271 - val_accuracy: 0.8191
- val_loss: 0.4491 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.8787 - loss: 0.2746 - val_accuracy: 0.8936
- val_loss: 0.3205 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.8916 - loss: 0.2757 - val_accuracy: 0.8404
- val_loss: 0.3212 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8657 - loss: 0.3034 - val_accuracy: 0.8085
- val_loss: 0.4139 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 36ms/step - accuracy: 0.8810 - loss: 0.2766 - val_accuracy: 0.7872
- val_loss: 0.4866 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.8834 - loss: 0.2677 - val_accuracy: 0.8404
- val_loss: 0.3776 - learning_rate: 0.0050
```

```
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8857 - loss: 0.2803 - val_accuracy: 0.8617
- val_loss: 0.3818 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.8622 - loss: 0.3255 - val_accuracy: 0.7979
- val_loss: 0.4169 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.8740 - loss: 0.3047 - val_accuracy: 0.8404
- val_loss: 0.4214 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.8404255509376526
Reseting all weights…
Current number of trials: 24
```
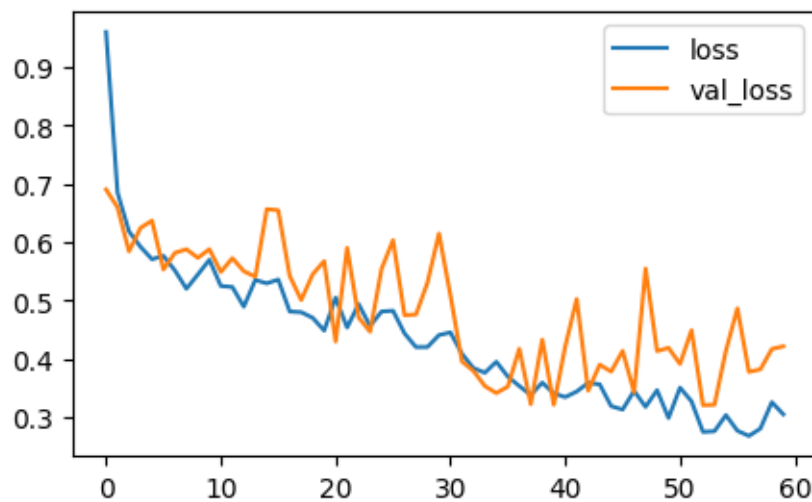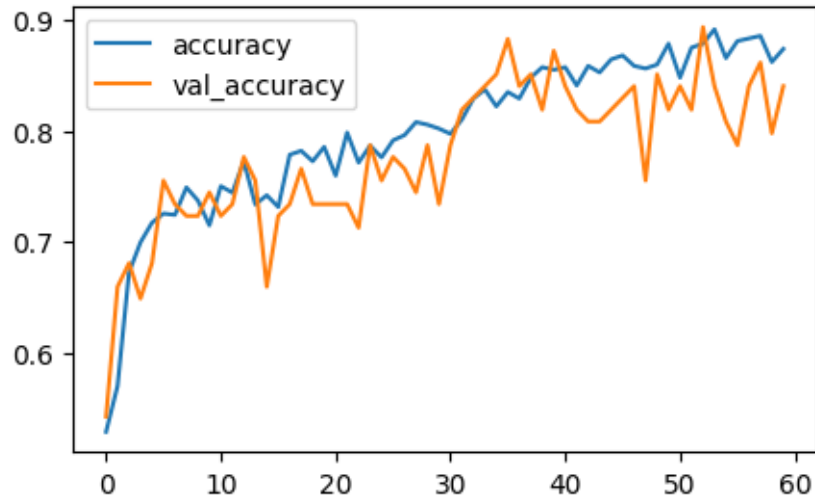
```
['loss', 'compile_metrics']
3/3                0s 11ms/step -
accuracy: 0.8382 - loss: 0.4417
[0.4213731288909912, 0.8404255509376526]
3/3                0s 22ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.77      0.90      0.83        41
        Male       0.91      0.79      0.85        53

    accuracy                           0.84        94
   macro avg       0.84      0.85      0.84        94
weighted avg       0.85      0.84      0.84        94

Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.4770 - loss: 0.9252 - val_accuracy: 0.5638
- val_loss: 0.6918 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5218 - loss: 0.6907 - val_accuracy: 0.4255
- val_loss: 0.7694 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6090 - loss: 0.6750 - val_accuracy: 0.5638
- val_loss: 0.6758 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.5206 - loss: 0.6936 - val_accuracy: 0.4362
```

```
- val_loss: 0.6987 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.5430 - loss: 0.6850 - val_accuracy: 0.5638
- val_loss: 0.6853 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 38ms/step - accuracy: 0.5324 - loss: 0.6891 - val_accuracy: 0.5957
- val_loss: 0.6510 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.6502 - loss: 0.6411 - val_accuracy: 0.5638
- val_loss: 0.7020 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.6737 - loss: 0.6158 - val_accuracy: 0.5532
- val_loss: 0.7287 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.6678 - loss: 0.6151 - val_accuracy: 0.6383
- val_loss: 0.6662 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.6678 - loss: 0.5947 - val_accuracy: 0.6277
- val_loss: 0.5939 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.6961 - loss: 0.5699 - val_accuracy: 0.6915
- val_loss: 0.5708 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.7079 - loss: 0.5772 - val_accuracy: 0.6915
- val_loss: 0.6350 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.7020 - loss: 0.5808 - val_accuracy: 0.6809
- val_loss: 0.6570 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7055 - loss: 0.5636 - val_accuracy: 0.7021
- val_loss: 0.6351 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.6949 - loss: 0.5890 - val_accuracy: 0.6915
- val_loss: 0.5697 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7114 - loss: 0.5731 - val_accuracy: 0.6489
- val_loss: 0.6191 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.6973 - loss: 0.5647 - val_accuracy: 0.7021
- val_loss: 0.6237 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7397 - loss: 0.5332 - val_accuracy: 0.6702
- val_loss: 0.6312 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 36ms/step - accuracy: 0.7126 - loss: 0.5620 - val_accuracy: 0.7128
- val_loss: 0.5372 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7385 - loss: 0.5452 - val_accuracy: 0.6702
```

```
- val_loss: 0.6043 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7362 - loss: 0.5357 - val_accuracy: 0.6489
- val_loss: 0.6367 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 38ms/step - accuracy: 0.7303 - loss: 0.5291 - val_accuracy: 0.6596
- val_loss: 0.5799 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.7326 - loss: 0.5328 - val_accuracy: 0.7021
- val_loss: 0.6094 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 36ms/step - accuracy: 0.7491 - loss: 0.5117 - val_accuracy: 0.6702
- val_loss: 0.5967 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7491 - loss: 0.5281 - val_accuracy: 0.7021
- val_loss: 0.5620 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.7279 - loss: 0.5038 - val_accuracy: 0.7234
- val_loss: 0.6099 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.7150 - loss: 0.5297 - val_accuracy: 0.7021
- val_loss: 0.6392 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.7185 - loss: 0.5443 - val_accuracy: 0.6702
- val_loss: 0.6543 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.5031 - val_accuracy: 0.6702
- val_loss: 0.5781 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 36ms/step - accuracy: 0.7550 - loss: 0.5049 - val_accuracy: 0.7021
- val_loss: 0.5812 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.7468 - loss: 0.5115 - val_accuracy: 0.7021
- val_loss: 0.5480 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.7503 - loss: 0.5133 - val_accuracy: 0.7128
- val_loss: 0.6002 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.7362 - loss: 0.5208 - val_accuracy: 0.7128
- val_loss: 0.5507 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.7621 - loss: 0.4988 - val_accuracy: 0.7340
- val_loss: 0.5568 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.7656 - loss: 0.5031 - val_accuracy: 0.7447
- val_loss: 0.5110 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.7444 - loss: 0.5115 - val_accuracy: 0.7340
```

```
- val_loss: 0.5409 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.7538 - loss: 0.4923 - val_accuracy: 0.7340
- val_loss: 0.5910 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.7420 - loss: 0.5077 - val_accuracy: 0.7660
- val_loss: 0.5867 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 38ms/step - accuracy: 0.7633 - loss: 0.4967 - val_accuracy: 0.7340
- val_loss: 0.5984 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.7444 - loss: 0.4892 - val_accuracy: 0.7340
- val_loss: 0.5877 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.4580 - val_accuracy: 0.7128
- val_loss: 0.6135 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.7291 - loss: 0.5118 - val_accuracy: 0.7447
- val_loss: 0.5575 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.7739 - loss: 0.4489 - val_accuracy: 0.7872
- val_loss: 0.5981 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.7727 - loss: 0.4822 - val_accuracy: 0.7447
- val_loss: 0.5346 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 35ms/step - accuracy: 0.7633 - loss: 0.4617 - val_accuracy: 0.7660
- val_loss: 0.5350 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 36ms/step - accuracy: 0.7986 - loss: 0.4377 - val_accuracy: 0.7340
- val_loss: 0.5129 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 36ms/step - accuracy: 0.7739 - loss: 0.4802 - val_accuracy: 0.7447
- val_loss: 0.5181 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 36ms/step - accuracy: 0.7574 - loss: 0.4850 - val_accuracy: 0.7128
- val_loss: 0.5573 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.7739 - loss: 0.4983 - val_accuracy: 0.7234
- val_loss: 0.5776 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.7609 - loss: 0.4747 - val_accuracy: 0.7553
- val_loss: 0.5437 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.7668 - loss: 0.4850 - val_accuracy: 0.7128
- val_loss: 0.5723 - learning_rate: 0.0050
Epoch 52/60
27/27 - 3s - 95ms/step - accuracy: 0.7880 - loss: 0.4540 - val_accuracy: 0.7234
```

- val_loss: 0.5665 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8033 - loss: 0.4270 - val_accuracy: 0.7340
- val_loss: 0.6343 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.7915 - loss: 0.4458 - val_accuracy: 0.7234
- val_loss: 0.6138 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 36ms/step - accuracy: 0.8033 - loss: 0.4322 - val_accuracy: 0.7128
- val_loss: 0.5773 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 36ms/step - accuracy: 0.7833 - loss: 0.4316 - val_accuracy: 0.7340
- val_loss: 0.5602 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.8104 - loss: 0.4167 - val_accuracy: 0.7340
- val_loss: 0.6431 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 36ms/step - accuracy: 0.7974 - loss: 0.4411 - val_accuracy: 0.7766
- val_loss: 0.5439 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.8033 - loss: 0.4139 - val_accuracy: 0.7447
- val_loss: 0.5570 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.8045 - loss: 0.4007 - val_accuracy: 0.7766
- val_loss: 0.5380 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.7765957713127136
Reseting all weights…
Current number of trials: 25
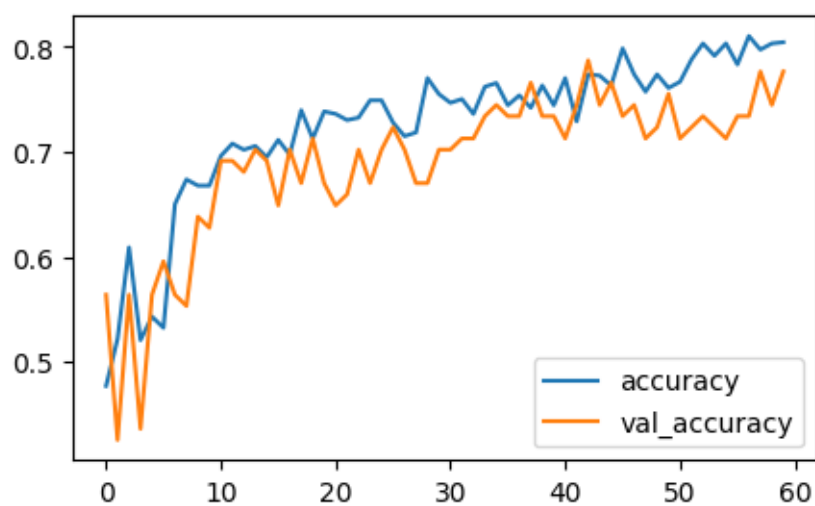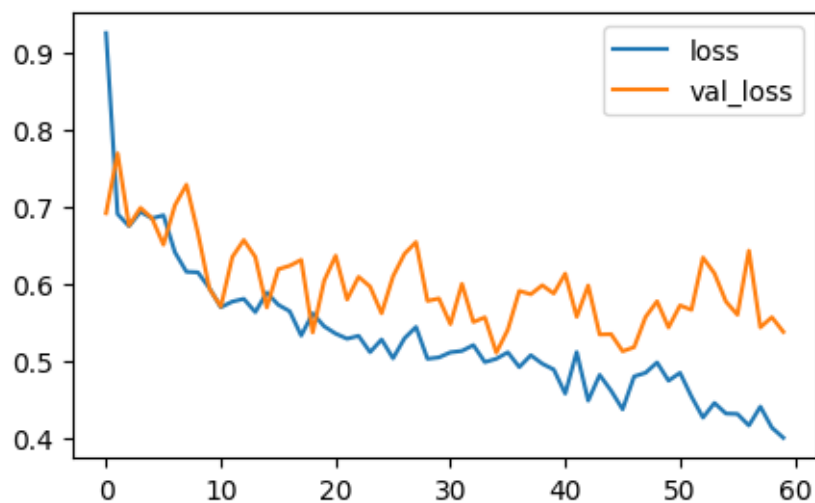
```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.7750 - loss: 0.5848
[0.5379968881607056, 0.7765957713127136]
3/3              0s 21ms/step
Classification Report:
             precision    recall  f1-score   support

     Female      0.75       0.73      0.74        41
       Male      0.80       0.81      0.80        53

   accuracy                           0.78        94
```

```
   macro avg        0.77      0.77      0.77        94
weighted avg        0.78      0.78      0.78        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 60ms/step - accuracy: 0.5289 - loss: 0.9391 - val_accuracy: 0.4362
- val_loss: 0.7762 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6952 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6943 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6941 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.5065 - loss: 0.7033 - val_accuracy: 0.4362
- val_loss: 0.6900 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.4876 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6940 - val_accuracy: 0.4362
```

```
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 35ms/step - accuracy: 0.4829 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6937 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6974 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
```

```
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 39/60
27/27 - 311s - 12s/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 42ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 39ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
```

```
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6971 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6941 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6968 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6939 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 40ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
```
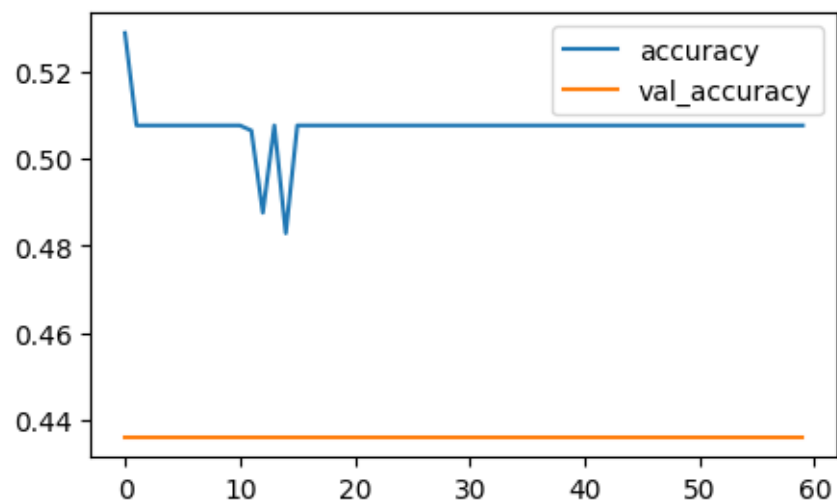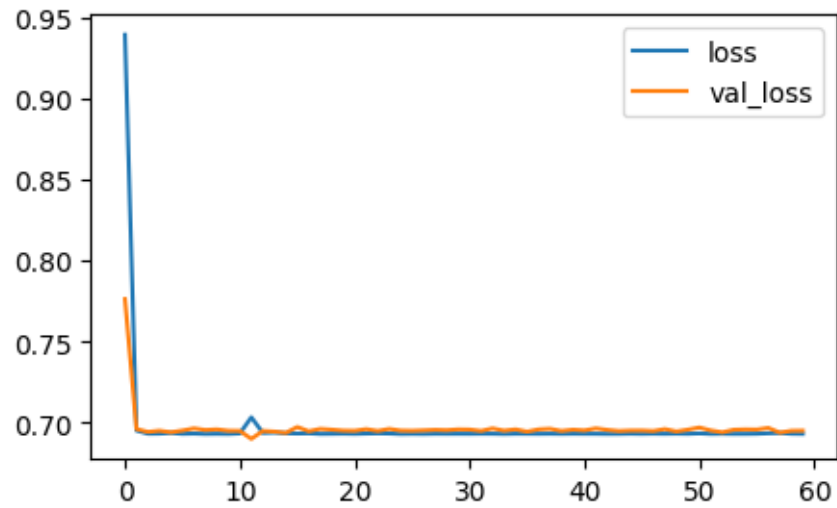
'my_model.keras')`.

Current validation accuracy: 0.43617022037506104
Reseting all weights…
Current number of trials: 26


```
['loss', 'compile_metrics']
3/3              0s 11ms/step -
accuracy: 0.4603 - loss: 0.6944
[0.6950886249542236, 0.43617022037506104]
3/3              0s 22ms/step
Classification Report:
             precision    recall  f1-score   support
```

```
      Female      0.44      1.00      0.61      41
        Male      0.00      0.00      0.00      53

    accuracy                          0.44      94
   macro avg      0.22      0.50      0.30      94
weighted avg      0.19      0.44      0.26      94
```

Found 943 files belonging to 2 classes.

```
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
```

```
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5218 - loss: 1.2555 - val_accuracy: 0.5851
- val_loss: 0.6910 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.6137 - loss: 0.6623 - val_accuracy: 0.6596
- val_loss: 0.6187 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.7044 - loss: 0.5884 - val_accuracy: 0.7234
- val_loss: 0.6011 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.7291 - loss: 0.5586 - val_accuracy: 0.7660
- val_loss: 0.5254 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.6914 - loss: 0.5740 - val_accuracy: 0.7021
- val_loss: 0.6005 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.7267 - loss: 0.5408 - val_accuracy: 0.7234
- val_loss: 0.5976 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.7350 - loss: 0.5226 - val_accuracy: 0.7872
```

- val_loss: 0.5043 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.7609 - loss: 0.5225 - val_accuracy: 0.7766
- val_loss: 0.5371 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 36ms/step - accuracy: 0.7656 - loss: 0.4896 - val_accuracy: 0.7766
- val_loss: 0.6203 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7656 - loss: 0.5023 - val_accuracy: 0.7660
- val_loss: 0.5120 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7691 - loss: 0.5084 - val_accuracy: 0.7979
- val_loss: 0.4527 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 38ms/step - accuracy: 0.7892 - loss: 0.4508 - val_accuracy: 0.8085
- val_loss: 0.4249 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 38ms/step - accuracy: 0.7809 - loss: 0.4546 - val_accuracy: 0.7553
- val_loss: 0.4921 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7550 - loss: 0.5148 - val_accuracy: 0.7872
- val_loss: 0.5022 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7845 - loss: 0.4834 - val_accuracy: 0.7766
- val_loss: 0.4614 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.8104 - loss: 0.4317 - val_accuracy: 0.7766
- val_loss: 0.4580 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.8257 - loss: 0.4251 - val_accuracy: 0.7766
- val_loss: 0.5173 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 38ms/step - accuracy: 0.7986 - loss: 0.4096 - val_accuracy: 0.7979
- val_loss: 0.4046 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 38ms/step - accuracy: 0.8021 - loss: 0.4173 - val_accuracy: 0.8191
- val_loss: 0.4158 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.8304 - loss: 0.3962 - val_accuracy: 0.8298
- val_loss: 0.3789 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 38ms/step - accuracy: 0.8186 - loss: 0.4047 - val_accuracy: 0.8298
- val_loss: 0.4995 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.8198 - loss: 0.3954 - val_accuracy: 0.8191
- val_loss: 0.4361 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.8221 - loss: 0.3897 - val_accuracy: 0.8085

```
- val_loss: 0.4655 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.8186 - loss: 0.3985 - val_accuracy: 0.8191
- val_loss: 0.4258 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.8304 - loss: 0.3675 - val_accuracy: 0.8404
- val_loss: 0.3382 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.8516 - loss: 0.3509 - val_accuracy: 0.8298
- val_loss: 0.4257 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.8327 - loss: 0.3782 - val_accuracy: 0.8191
- val_loss: 0.3468 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.8210 - loss: 0.3844 - val_accuracy: 0.8085
- val_loss: 0.4173 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 38ms/step - accuracy: 0.8339 - loss: 0.3721 - val_accuracy: 0.8191
- val_loss: 0.5665 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.8539 - loss: 0.3474 - val_accuracy: 0.8936
- val_loss: 0.3337 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.8516 - loss: 0.3308 - val_accuracy: 0.8617
- val_loss: 0.3842 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.8528 - loss: 0.3451 - val_accuracy: 0.8191
- val_loss: 0.3270 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.8539 - loss: 0.3462 - val_accuracy: 0.8085
- val_loss: 0.4010 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.8445 - loss: 0.3453 - val_accuracy: 0.8191
- val_loss: 0.5002 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.8516 - loss: 0.3379 - val_accuracy: 0.8404
- val_loss: 0.3581 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.8728 - loss: 0.3115 - val_accuracy: 0.8617
- val_loss: 0.3299 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.8504 - loss: 0.3302 - val_accuracy: 0.8191
- val_loss: 0.3636 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.8539 - loss: 0.3224 - val_accuracy: 0.8298
- val_loss: 0.4138 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.8445 - loss: 0.3415 - val_accuracy: 0.8298
```

```
- val_loss: 0.3968 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 38ms/step - accuracy: 0.8634 - loss: 0.3113 - val_accuracy: 0.8617
- val_loss: 0.4053 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.8339 - loss: 0.3594 - val_accuracy: 0.8298
- val_loss: 0.4161 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.8610 - loss: 0.3178 - val_accuracy: 0.8617
- val_loss: 0.3962 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.8728 - loss: 0.2767 - val_accuracy: 0.8085
- val_loss: 0.4351 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 38ms/step - accuracy: 0.8740 - loss: 0.3034 - val_accuracy: 0.8617
- val_loss: 0.3800 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8587 - loss: 0.3168 - val_accuracy: 0.8511
- val_loss: 0.3847 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8634 - loss: 0.3230 - val_accuracy: 0.8617
- val_loss: 0.4087 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8728 - loss: 0.2881 - val_accuracy: 0.8617
- val_loss: 0.3601 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8893 - loss: 0.2636 - val_accuracy: 0.8723
- val_loss: 0.3898 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.8846 - loss: 0.2698 - val_accuracy: 0.8511
- val_loss: 0.3561 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8916 - loss: 0.2749 - val_accuracy: 0.8404
- val_loss: 0.3704 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.9058 - loss: 0.2467 - val_accuracy: 0.8191
- val_loss: 0.4670 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8952 - loss: 0.2395 - val_accuracy: 0.8511
- val_loss: 0.4831 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8716 - loss: 0.3261 - val_accuracy: 0.8723
- val_loss: 0.2931 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8975 - loss: 0.2405 - val_accuracy: 0.8298
- val_loss: 0.4419 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.8952 - loss: 0.2722 - val_accuracy: 0.8191
```

```
- val_loss: 0.3756 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.9128 - loss: 0.2162 - val_accuracy: 0.8617
- val_loss: 0.3943 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8952 - loss: 0.2676 - val_accuracy: 0.7766
- val_loss: 0.4534 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.9069 - loss: 0.2306 - val_accuracy: 0.8191
- val_loss: 0.3715 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8799 - loss: 0.2777 - val_accuracy: 0.8404
- val_loss: 0.4587 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.9022 - loss: 0.2585 - val_accuracy: 0.7979
- val_loss: 0.4544 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.7978723645210266
Reseting all weights…
Current number of trials: 27
```
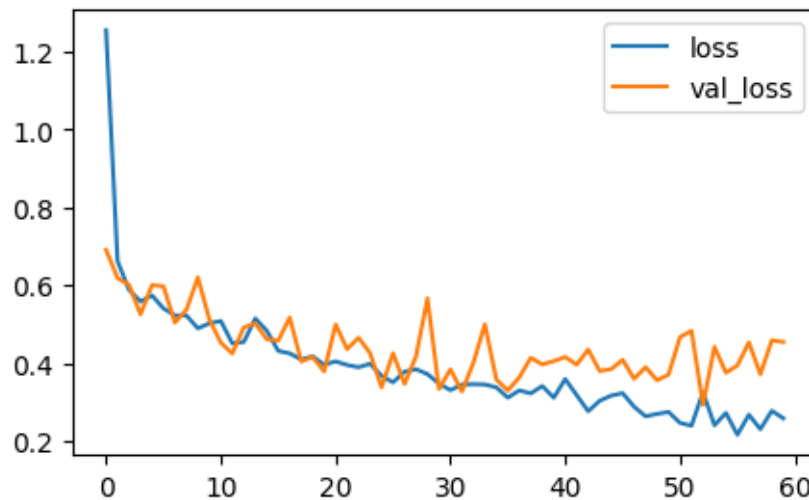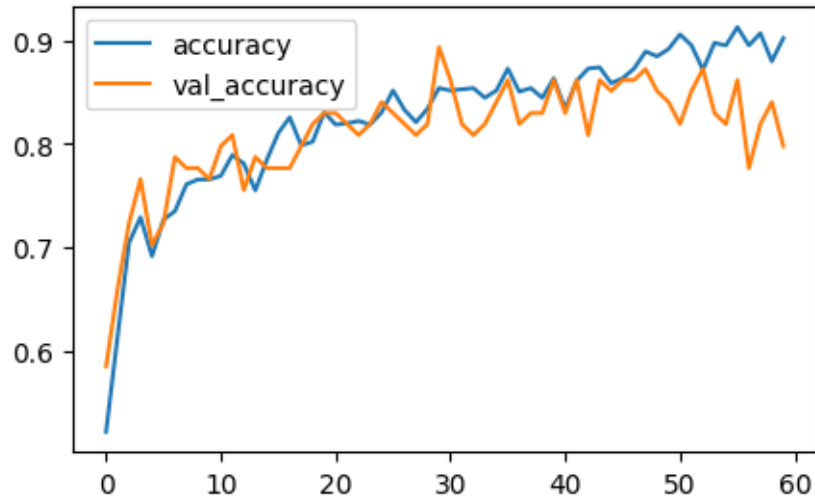
```
['loss', 'compile_metrics']
3/3              0s 11ms/step -
accuracy: 0.8013 - loss: 0.4780
[0.45440226793289185, 0.7978723645210266]
3/3              0s 22ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.72      0.88      0.79        41
        Male       0.89      0.74      0.80        53

    accuracy                           0.80        94
   macro avg       0.80      0.81      0.80        94
weighted avg       0.81      0.80      0.80        94

Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5006 - loss: 0.8680 - val_accuracy: 0.5957
- val_loss: 0.6890 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5395 - loss: 0.6856 - val_accuracy: 0.4681
- val_loss: 0.6664 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6537 - loss: 0.6249 - val_accuracy: 0.6702
- val_loss: 0.5629 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 36ms/step - accuracy: 0.6773 - loss: 0.6081 - val_accuracy: 0.7021
```

```
- val_loss: 0.5599 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.6714 - loss: 0.6035 - val_accuracy: 0.6383
- val_loss: 0.6184 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 36ms/step - accuracy: 0.6973 - loss: 0.5827 - val_accuracy: 0.6383
- val_loss: 0.5937 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.6985 - loss: 0.5695 - val_accuracy: 0.7660
- val_loss: 0.5224 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.7432 - loss: 0.5326 - val_accuracy: 0.6809
- val_loss: 0.5450 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 36ms/step - accuracy: 0.7373 - loss: 0.5353 - val_accuracy: 0.7553
- val_loss: 0.5639 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.7338 - loss: 0.5192 - val_accuracy: 0.6809
- val_loss: 0.6002 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.7350 - loss: 0.5207 - val_accuracy: 0.7447
- val_loss: 0.5629 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.7397 - loss: 0.5353 - val_accuracy: 0.7128
- val_loss: 0.5841 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.7350 - loss: 0.5487 - val_accuracy: 0.7447
- val_loss: 0.5040 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 36ms/step - accuracy: 0.7550 - loss: 0.5234 - val_accuracy: 0.6915
- val_loss: 0.5615 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7303 - loss: 0.5416 - val_accuracy: 0.7660
- val_loss: 0.5022 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7538 - loss: 0.5121 - val_accuracy: 0.7340
- val_loss: 0.5223 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7503 - loss: 0.5056 - val_accuracy: 0.7660
- val_loss: 0.5178 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7574 - loss: 0.4947 - val_accuracy: 0.7340
- val_loss: 0.5136 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 36ms/step - accuracy: 0.7691 - loss: 0.4774 - val_accuracy: 0.8191
- val_loss: 0.4475 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.7762 - loss: 0.4694 - val_accuracy: 0.7872
```

```
- val_loss: 0.4478 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.7786 - loss: 0.4862 - val_accuracy: 0.7660
- val_loss: 0.5503 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 36ms/step - accuracy: 0.7633 - loss: 0.4877 - val_accuracy: 0.7553
- val_loss: 0.5027 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.7715 - loss: 0.4739 - val_accuracy: 0.8085
- val_loss: 0.4361 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 36ms/step - accuracy: 0.7939 - loss: 0.4565 - val_accuracy: 0.7340
- val_loss: 0.5229 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.7621 - loss: 0.5084 - val_accuracy: 0.7021
- val_loss: 0.5863 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.7715 - loss: 0.4765 - val_accuracy: 0.7234
- val_loss: 0.5399 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.7903 - loss: 0.4563 - val_accuracy: 0.6915
- val_loss: 0.6151 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.7774 - loss: 0.4667 - val_accuracy: 0.7340
- val_loss: 0.4470 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.8009 - loss: 0.4464 - val_accuracy: 0.7234
- val_loss: 0.5605 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7998 - loss: 0.4320 - val_accuracy: 0.7660
- val_loss: 0.4796 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.7927 - loss: 0.4539 - val_accuracy: 0.7553
- val_loss: 0.4627 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 38ms/step - accuracy: 0.7927 - loss: 0.4452 - val_accuracy: 0.7447
- val_loss: 0.4794 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.7762 - loss: 0.4528 - val_accuracy: 0.7553
- val_loss: 0.4859 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.8033 - loss: 0.4315 - val_accuracy: 0.7128
- val_loss: 0.5630 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.8104 - loss: 0.4061 - val_accuracy: 0.8085
- val_loss: 0.4600 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.7998 - loss: 0.4356 - val_accuracy: 0.7447
```

```
- val_loss: 0.5919 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.8151 - loss: 0.4126 - val_accuracy: 0.7553
- val_loss: 0.5243 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.8174 - loss: 0.4018 - val_accuracy: 0.7766
- val_loss: 0.6235 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 36ms/step - accuracy: 0.8104 - loss: 0.4166 - val_accuracy: 0.6702
- val_loss: 0.7500 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 36ms/step - accuracy: 0.7986 - loss: 0.4643 - val_accuracy: 0.7553
- val_loss: 0.5241 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.8186 - loss: 0.4207 - val_accuracy: 0.7340
- val_loss: 0.5993 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.7927 - loss: 0.4184 - val_accuracy: 0.7553
- val_loss: 0.6209 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 36ms/step - accuracy: 0.7880 - loss: 0.4429 - val_accuracy: 0.7340
- val_loss: 0.6745 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.7974 - loss: 0.4273 - val_accuracy: 0.7340
- val_loss: 0.5196 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.7868 - loss: 0.4685 - val_accuracy: 0.7660
- val_loss: 0.4944 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 36ms/step - accuracy: 0.8269 - loss: 0.3793 - val_accuracy: 0.7553
- val_loss: 0.4835 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 36ms/step - accuracy: 0.8363 - loss: 0.3677 - val_accuracy: 0.7128
- val_loss: 0.5768 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 38ms/step - accuracy: 0.8245 - loss: 0.3968 - val_accuracy: 0.7234
- val_loss: 0.5565 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.8198 - loss: 0.4231 - val_accuracy: 0.7766
- val_loss: 0.5161 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.8292 - loss: 0.3613 - val_accuracy: 0.7340
- val_loss: 0.5673 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.8457 - loss: 0.3292 - val_accuracy: 0.7872
- val_loss: 0.5390 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.8398 - loss: 0.3649 - val_accuracy: 0.7979
```

- val_loss: 0.4751 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.8339 - loss: 0.3822 - val_accuracy: 0.7979
- val_loss: 0.4569 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.8410 - loss: 0.3572 - val_accuracy: 0.7447
- val_loss: 0.5464 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 36ms/step - accuracy: 0.8587 - loss: 0.3289 - val_accuracy: 0.7766
- val_loss: 0.5089 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 36ms/step - accuracy: 0.8363 - loss: 0.3666 - val_accuracy: 0.7128
- val_loss: 0.6073 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.8280 - loss: 0.3812 - val_accuracy: 0.7553
- val_loss: 0.5572 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 36ms/step - accuracy: 0.8174 - loss: 0.3950 - val_accuracy: 0.7553
- val_loss: 0.4755 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.8398 - loss: 0.3484 - val_accuracy: 0.7447
- val_loss: 0.5349 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.8634 - loss: 0.3328 - val_accuracy: 0.7553
- val_loss: 0.6340 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.7553191781044006
Reseting all weights…
Current number of trials: 28
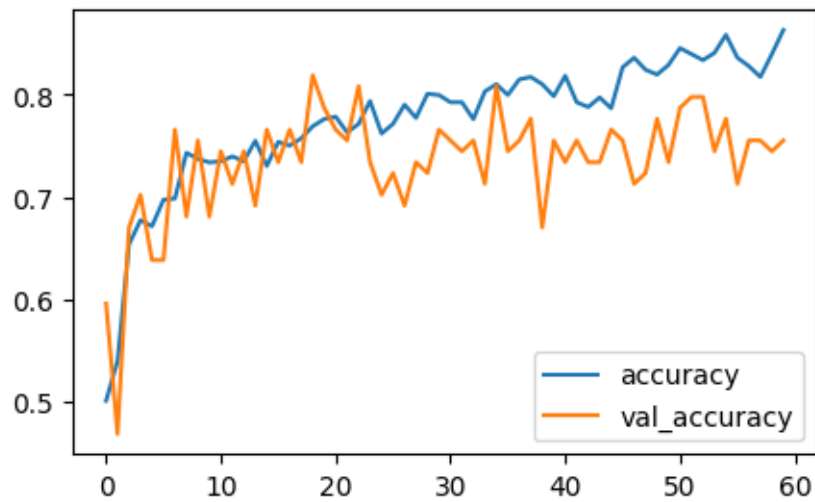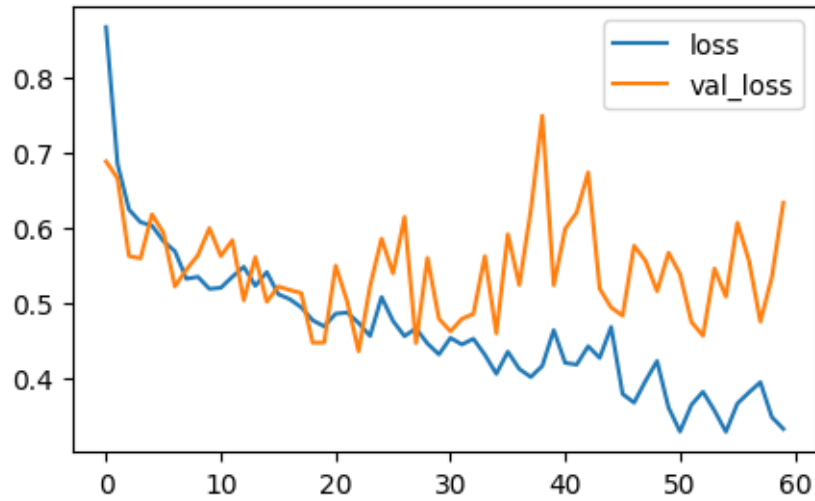
```
['loss', 'compile_metrics']
3/3              0s 10ms/step –
accuracy: 0.7488 – loss: 0.6658
[0.6340372562408447, 0.7553191781044006]
3/3              0s 21ms/step
Classification Report:
            precision    recall  f1-score   support

    Female       0.70      0.78      0.74        41
      Male       0.81      0.74      0.77        53

  accuracy                          0.76        94
```

```
   macro avg       0.75      0.76      0.75          94
weighted avg       0.76      0.76      0.76          94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5053 - loss: 0.9009 - val_accuracy: 0.4362
- val_loss: 0.6932 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5300 - loss: 0.6903 - val_accuracy: 0.4681
- val_loss: 0.6922 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.5512 - loss: 0.6792 - val_accuracy: 0.5745
- val_loss: 0.7126 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.6337 - loss: 0.6378 - val_accuracy: 0.6489
- val_loss: 0.6445 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 36ms/step - accuracy: 0.7044 - loss: 0.6055 - val_accuracy: 0.6809
- val_loss: 0.6103 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 36ms/step - accuracy: 0.6667 - loss: 0.6037 - val_accuracy: 0.7021
- val_loss: 0.6350 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.7173 - loss: 0.5602 - val_accuracy: 0.6915
- val_loss: 0.5884 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.7173 - loss: 0.5545 - val_accuracy: 0.7128
- val_loss: 0.5840 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 36ms/step - accuracy: 0.7232 - loss: 0.5401 - val_accuracy: 0.7234
- val_loss: 0.5712 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.7385 - loss: 0.5281 - val_accuracy: 0.6489
- val_loss: 0.5909 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.7197 - loss: 0.5414 - val_accuracy: 0.7021
- val_loss: 0.6059 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.7432 - loss: 0.5162 - val_accuracy: 0.6915
- val_loss: 0.5908 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.7468 - loss: 0.5132 - val_accuracy: 0.6809
- val_loss: 0.5717 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 36ms/step - accuracy: 0.7491 - loss: 0.5112 - val_accuracy: 0.7128
```

```
- val_loss: 0.6627 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.7279 - loss: 0.5223 - val_accuracy: 0.7234
- val_loss: 0.5722 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 36ms/step - accuracy: 0.7680 - loss: 0.4827 - val_accuracy: 0.7340
- val_loss: 0.5589 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 36ms/step - accuracy: 0.8045 - loss: 0.4596 - val_accuracy: 0.7660
- val_loss: 0.5381 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7691 - loss: 0.4862 - val_accuracy: 0.7553
- val_loss: 0.5704 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7821 - loss: 0.4612 - val_accuracy: 0.7234
- val_loss: 0.6043 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7833 - loss: 0.4722 - val_accuracy: 0.7553
- val_loss: 0.5305 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.8057 - loss: 0.4464 - val_accuracy: 0.7872
- val_loss: 0.4593 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 36ms/step - accuracy: 0.8186 - loss: 0.4022 - val_accuracy: 0.7340
- val_loss: 0.6283 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.7797 - loss: 0.4623 - val_accuracy: 0.7660
- val_loss: 0.5092 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 36ms/step - accuracy: 0.8104 - loss: 0.4218 - val_accuracy: 0.8298
- val_loss: 0.5214 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.8198 - loss: 0.4038 - val_accuracy: 0.8085
- val_loss: 0.4805 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.8009 - loss: 0.4096 - val_accuracy: 0.7872
- val_loss: 0.4351 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.8257 - loss: 0.4108 - val_accuracy: 0.8191
- val_loss: 0.4134 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.8410 - loss: 0.3615 - val_accuracy: 0.8298
- val_loss: 0.4936 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.8327 - loss: 0.3802 - val_accuracy: 0.7660
- val_loss: 0.4905 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.8410 - loss: 0.3374 - val_accuracy: 0.8298
```

```
- val_loss: 0.4486 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.8410 - loss: 0.3739 - val_accuracy: 0.8404
- val_loss: 0.5645 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.8339 - loss: 0.3669 - val_accuracy: 0.7872
- val_loss: 0.4403 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.8210 - loss: 0.4239 - val_accuracy: 0.8085
- val_loss: 0.4801 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.8386 - loss: 0.3349 - val_accuracy: 0.8191
- val_loss: 0.3903 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.8363 - loss: 0.3914 - val_accuracy: 0.8085
- val_loss: 0.4282 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 38ms/step - accuracy: 0.7750 - loss: 0.4668 - val_accuracy: 0.7872
- val_loss: 0.4982 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.7998 - loss: 0.3976 - val_accuracy: 0.7979
- val_loss: 0.4368 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.8398 - loss: 0.3705 - val_accuracy: 0.8298
- val_loss: 0.4730 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 36ms/step - accuracy: 0.8363 - loss: 0.3606 - val_accuracy: 0.7979
- val_loss: 0.5002 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 36ms/step - accuracy: 0.8492 - loss: 0.3449 - val_accuracy: 0.8191
- val_loss: 0.4957 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 38ms/step - accuracy: 0.7833 - loss: 0.4873 - val_accuracy: 0.6702
- val_loss: 0.6240 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.8068 - loss: 0.4179 - val_accuracy: 0.8404
- val_loss: 0.5464 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 36ms/step - accuracy: 0.8351 - loss: 0.3755 - val_accuracy: 0.7553
- val_loss: 0.6563 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.8045 - loss: 0.4660 - val_accuracy: 0.7979
- val_loss: 0.4251 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8539 - loss: 0.3284 - val_accuracy: 0.8404
- val_loss: 0.4324 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 36ms/step - accuracy: 0.8645 - loss: 0.2984 - val_accuracy: 0.7979
```

```
- val_loss: 0.5079 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 36ms/step - accuracy: 0.8280 - loss: 0.3694 - val_accuracy: 0.7553
- val_loss: 0.5789 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 36ms/step - accuracy: 0.8846 - loss: 0.2868 - val_accuracy: 0.7979
- val_loss: 0.5587 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.8551 - loss: 0.3351 - val_accuracy: 0.8830
- val_loss: 0.4456 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8445 - loss: 0.3366 - val_accuracy: 0.8085
- val_loss: 0.4067 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.8575 - loss: 0.3410 - val_accuracy: 0.8191
- val_loss: 0.4398 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 38ms/step - accuracy: 0.8622 - loss: 0.2994 - val_accuracy: 0.8404
- val_loss: 0.3859 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.8716 - loss: 0.2890 - val_accuracy: 0.8298
- val_loss: 0.4968 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8575 - loss: 0.3258 - val_accuracy: 0.8191
- val_loss: 0.4672 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 36ms/step - accuracy: 0.8928 - loss: 0.2514 - val_accuracy: 0.8298
- val_loss: 0.4232 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 36ms/step - accuracy: 0.8787 - loss: 0.2863 - val_accuracy: 0.8404
- val_loss: 0.4096 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.8775 - loss: 0.2702 - val_accuracy: 0.8085
- val_loss: 0.6221 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8728 - loss: 0.2995 - val_accuracy: 0.8298
- val_loss: 0.4423 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.8928 - loss: 0.2562 - val_accuracy: 0.8191
- val_loss: 0.6883 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.8810 - loss: 0.2485 - val_accuracy: 0.8085
- val_loss: 0.4874 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
```
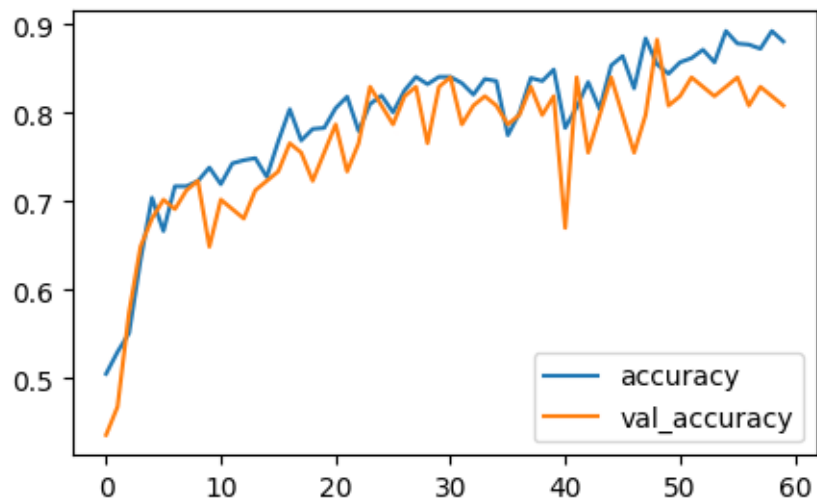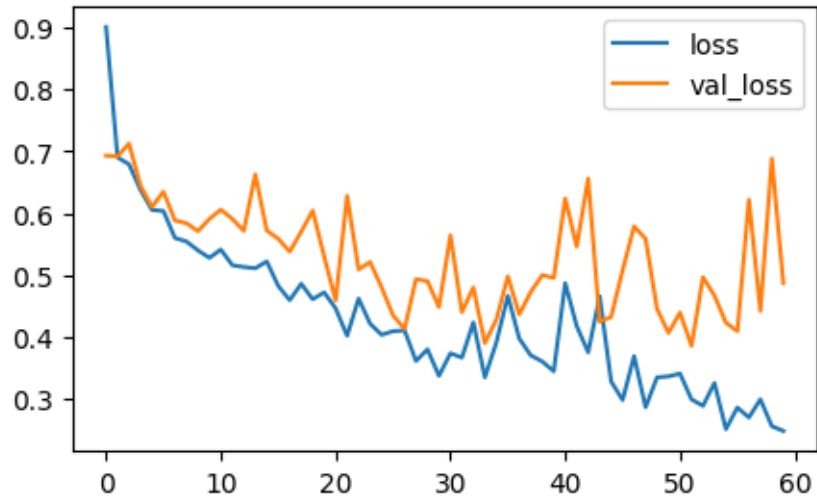
```
'my_model.keras')`.
```

Current validation accuracy: 0.8085106611251831
Reseting all weights…
Current number of trials: 29


```
['loss', 'compile_metrics']
3/3               0s 10ms/step -
accuracy: 0.8144 - loss: 0.4902
[0.4873638153076172, 0.8085106611251831]
3/3               0s 22ms/step
Classification Report:
              precision    recall  f1-score    support
```

```
        Female       0.78      0.78      0.78        41
          Male       0.83      0.83      0.83        53

      accuracy                           0.81        94
     macro avg       0.81      0.81      0.81        94
  weighted avg       0.81      0.81      0.81        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 60ms/step - accuracy: 0.5006 - loss: 0.8236 - val_accuracy: 0.5638
- val_loss: 0.6968 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 36ms/step - accuracy: 0.5442 - loss: 0.6950 - val_accuracy: 0.5638
- val_loss: 0.6903 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6408 - loss: 0.6465 - val_accuracy: 0.6383
- val_loss: 0.6566 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 36ms/step - accuracy: 0.6737 - loss: 0.6190 - val_accuracy: 0.6596
- val_loss: 0.6666 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 36ms/step - accuracy: 0.6384 - loss: 0.6509 - val_accuracy: 0.5957
- val_loss: 0.6720 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 36ms/step - accuracy: 0.6561 - loss: 0.6207 - val_accuracy: 0.6702
- val_loss: 0.6068 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 38ms/step - accuracy: 0.6914 - loss: 0.5876 - val_accuracy: 0.7340
- val_loss: 0.5957 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.7326 - loss: 0.5307 - val_accuracy: 0.7128
- val_loss: 0.5903 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 36ms/step - accuracy: 0.6961 - loss: 0.5690 - val_accuracy: 0.7128
- val_loss: 0.5694 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.7102 - loss: 0.5577 - val_accuracy: 0.7128
- val_loss: 0.6060 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.7220 - loss: 0.5524 - val_accuracy: 0.6702
- val_loss: 0.6080 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.7256 - loss: 0.5344 - val_accuracy: 0.7447
- val_loss: 0.5539 - learning_rate: 0.0050
```

```
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.7515 - loss: 0.5287 - val_accuracy: 0.7447
- val_loss: 0.5741 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 36ms/step - accuracy: 0.7597 - loss: 0.5209 - val_accuracy: 0.7021
- val_loss: 0.5600 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.7479 - loss: 0.5137 - val_accuracy: 0.6277
- val_loss: 0.6520 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 36ms/step - accuracy: 0.7197 - loss: 0.5517 - val_accuracy: 0.7553
- val_loss: 0.5373 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 36ms/step - accuracy: 0.7444 - loss: 0.5221 - val_accuracy: 0.7660
- val_loss: 0.5245 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7750 - loss: 0.4776 - val_accuracy: 0.7234
- val_loss: 0.5588 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 36ms/step - accuracy: 0.7468 - loss: 0.5281 - val_accuracy: 0.7553
- val_loss: 0.5522 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.7880 - loss: 0.4811 - val_accuracy: 0.7553
- val_loss: 0.5242 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.7797 - loss: 0.4800 - val_accuracy: 0.7660
- val_loss: 0.5499 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 36ms/step - accuracy: 0.7703 - loss: 0.4909 - val_accuracy: 0.7766
- val_loss: 0.5016 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.7691 - loss: 0.4732 - val_accuracy: 0.7447
- val_loss: 0.5552 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7797 - loss: 0.4458 - val_accuracy: 0.7128
- val_loss: 0.5525 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.7833 - loss: 0.4696 - val_accuracy: 0.7447
- val_loss: 0.5211 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.7762 - loss: 0.4942 - val_accuracy: 0.7340
- val_loss: 0.5985 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.7845 - loss: 0.4829 - val_accuracy: 0.7766
- val_loss: 0.4968 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.7797 - loss: 0.4629 - val_accuracy: 0.7766
- val_loss: 0.5070 - learning_rate: 0.0050
```

```
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.7880 - loss: 0.4429 - val_accuracy: 0.7660
- val_loss: 0.5116 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 36ms/step - accuracy: 0.8068 - loss: 0.4264 - val_accuracy: 0.8723
- val_loss: 0.4281 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.7986 - loss: 0.4452 - val_accuracy: 0.7553
- val_loss: 0.5447 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.7797 - loss: 0.4619 - val_accuracy: 0.7660
- val_loss: 0.4979 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.7974 - loss: 0.4396 - val_accuracy: 0.7447
- val_loss: 0.5135 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.8045 - loss: 0.4448 - val_accuracy: 0.7553
- val_loss: 0.5176 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.8033 - loss: 0.4294 - val_accuracy: 0.7553
- val_loss: 0.4967 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.8104 - loss: 0.4213 - val_accuracy: 0.7447
- val_loss: 0.4666 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.8221 - loss: 0.3935 - val_accuracy: 0.7553
- val_loss: 0.5659 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.8233 - loss: 0.4064 - val_accuracy: 0.7447
- val_loss: 0.5191 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 36ms/step - accuracy: 0.8092 - loss: 0.4185 - val_accuracy: 0.8191
- val_loss: 0.4803 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 38ms/step - accuracy: 0.8186 - loss: 0.4015 - val_accuracy: 0.7979
- val_loss: 0.4497 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.8339 - loss: 0.3598 - val_accuracy: 0.7979
- val_loss: 0.5280 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.8233 - loss: 0.3840 - val_accuracy: 0.7872
- val_loss: 0.4225 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 36ms/step - accuracy: 0.8221 - loss: 0.3978 - val_accuracy: 0.7660
- val_loss: 0.4683 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.8363 - loss: 0.3820 - val_accuracy: 0.7234
- val_loss: 0.6246 - learning_rate: 0.0050
```

```
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.8351 - loss: 0.3795 - val_accuracy: 0.7660
- val_loss: 0.4666 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8092 - loss: 0.4032 - val_accuracy: 0.7553
- val_loss: 0.5289 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 36ms/step - accuracy: 0.8257 - loss: 0.3938 - val_accuracy: 0.8191
- val_loss: 0.4280 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 36ms/step - accuracy: 0.8457 - loss: 0.3485 - val_accuracy: 0.7553
- val_loss: 0.4693 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.8398 - loss: 0.3501 - val_accuracy: 0.7872
- val_loss: 0.4774 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.8186 - loss: 0.4161 - val_accuracy: 0.7766
- val_loss: 0.3915 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.8481 - loss: 0.3653 - val_accuracy: 0.7766
- val_loss: 0.5615 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.8563 - loss: 0.3467 - val_accuracy: 0.7447
- val_loss: 0.5812 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.8551 - loss: 0.3121 - val_accuracy: 0.7553
- val_loss: 0.5523 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.8375 - loss: 0.3464 - val_accuracy: 0.7872
- val_loss: 0.4897 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 36ms/step - accuracy: 0.8551 - loss: 0.3306 - val_accuracy: 0.7766
- val_loss: 0.4648 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8551 - loss: 0.3175 - val_accuracy: 0.8191
- val_loss: 0.4851 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.8693 - loss: 0.2995 - val_accuracy: 0.8085
- val_loss: 0.4375 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 36ms/step - accuracy: 0.8634 - loss: 0.3090 - val_accuracy: 0.7766
- val_loss: 0.4787 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.8740 - loss: 0.2927 - val_accuracy: 0.7447
- val_loss: 0.7061 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.8528 - loss: 0.3363 - val_accuracy: 0.7979
- val_loss: 0.5871 - learning_rate: 0.0050
```

```
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.
```

```
Current validation accuracy: 0.7978723645210266
Resetting all weights…
Current number of trials: 30
```
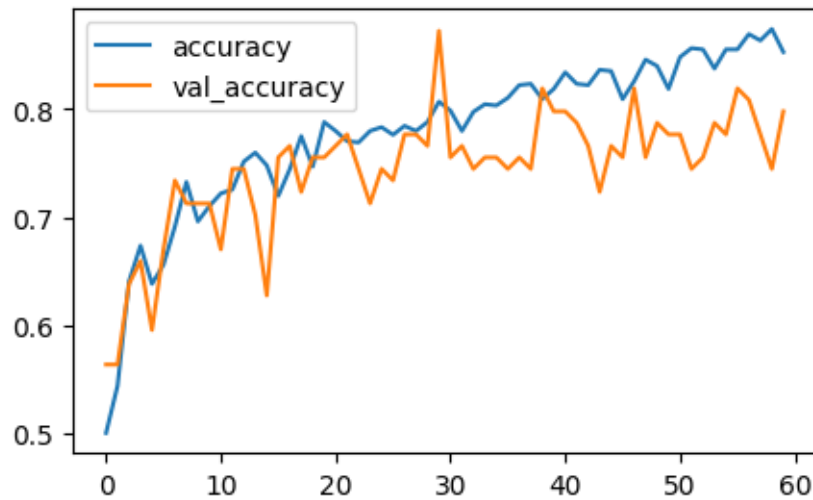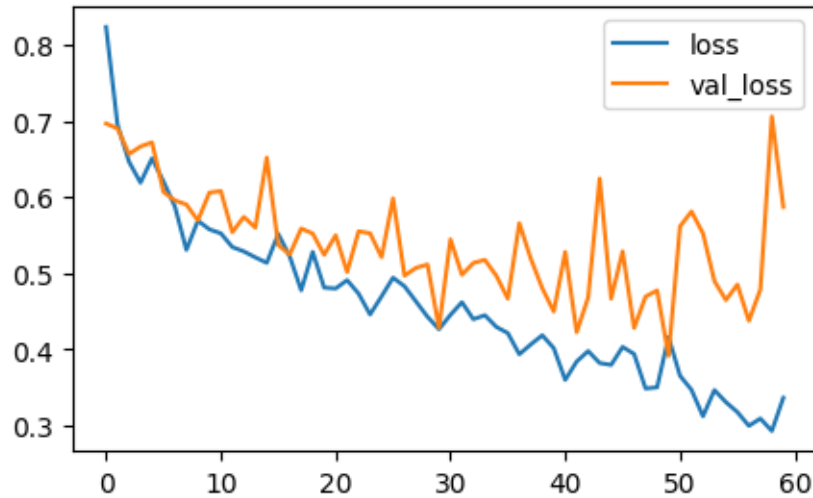


```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.7935 - loss: 0.5668
```

```
[0.5871414542198181, 0.7978723645210266]
3/3              0s 21ms/step
Classification Report:
              precision   recall  f1-score   support

      Female       0.73     0.85      0.79        41
        Male       0.87     0.75      0.81        53

    accuracy                          0.80        94
   macro avg       0.80     0.80      0.80        94
weighted avg       0.81     0.80      0.80        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5607 - loss: 1.0741 - val_accuracy: 0.5532
- val_loss: 0.7065 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.6372 - loss: 0.6473 - val_accuracy: 0.5745
- val_loss: 0.7000 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 38ms/step - accuracy: 0.6714 - loss: 0.6102 - val_accuracy: 0.6596
- val_loss: 0.6572 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.6949 - loss: 0.5971 - val_accuracy: 0.6915
- val_loss: 0.5838 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 36ms/step - accuracy: 0.7114 - loss: 0.5771 - val_accuracy: 0.6915
- val_loss: 0.6001 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.7338 - loss: 0.5375 - val_accuracy: 0.7447
- val_loss: 0.5583 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.7373 - loss: 0.5468 - val_accuracy: 0.7340
- val_loss: 0.6075 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.7468 - loss: 0.5327 - val_accuracy: 0.7340
- val_loss: 0.5335 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.7868 - loss: 0.4805 - val_accuracy: 0.7234
- val_loss: 0.5629 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7420 - loss: 0.5059 - val_accuracy: 0.7234
- val_loss: 0.5229 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 38ms/step - accuracy: 0.7550 - loss: 0.5030 - val_accuracy: 0.7872
```

```
- val_loss: 0.5105 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.7444 - loss: 0.5125 - val_accuracy: 0.7553
- val_loss: 0.5850 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.7491 - loss: 0.5202 - val_accuracy: 0.7447
- val_loss: 0.5369 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7644 - loss: 0.5007 - val_accuracy: 0.7447
- val_loss: 0.5561 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7668 - loss: 0.4874 - val_accuracy: 0.7340
- val_loss: 0.5052 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7527 - loss: 0.5172 - val_accuracy: 0.6809
- val_loss: 0.6482 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7727 - loss: 0.5104 - val_accuracy: 0.7234
- val_loss: 0.5890 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 37ms/step - accuracy: 0.7703 - loss: 0.4852 - val_accuracy: 0.7340
- val_loss: 0.5149 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7833 - loss: 0.4635 - val_accuracy: 0.8085
- val_loss: 0.4590 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7986 - loss: 0.4285 - val_accuracy: 0.7766
- val_loss: 0.5022 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7750 - loss: 0.4508 - val_accuracy: 0.7553
- val_loss: 0.5760 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7974 - loss: 0.4668 - val_accuracy: 0.7766
- val_loss: 0.5885 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 37ms/step - accuracy: 0.7903 - loss: 0.4514 - val_accuracy: 0.7979
- val_loss: 0.5470 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.8104 - loss: 0.4210 - val_accuracy: 0.7021
- val_loss: 0.5620 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7951 - loss: 0.4415 - val_accuracy: 0.7979
- val_loss: 0.5029 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.8104 - loss: 0.4223 - val_accuracy: 0.7553
- val_loss: 0.5813 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 39ms/step - accuracy: 0.7986 - loss: 0.4244 - val_accuracy: 0.7766
```

```
- val_loss: 0.5153 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.8280 - loss: 0.3810 - val_accuracy: 0.7872
- val_loss: 0.5233 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 37ms/step - accuracy: 0.8068 - loss: 0.4012 - val_accuracy: 0.8404
- val_loss: 0.4831 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.8045 - loss: 0.4055 - val_accuracy: 0.7660
- val_loss: 0.6488 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.8092 - loss: 0.4355 - val_accuracy: 0.7979
- val_loss: 0.4694 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 37ms/step - accuracy: 0.8245 - loss: 0.3995 - val_accuracy: 0.7979
- val_loss: 0.5145 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 37ms/step - accuracy: 0.8269 - loss: 0.3714 - val_accuracy: 0.7979
- val_loss: 0.6241 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.8269 - loss: 0.3860 - val_accuracy: 0.8085
- val_loss: 0.4649 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.8422 - loss: 0.3620 - val_accuracy: 0.8191
- val_loss: 0.5056 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.8151 - loss: 0.4164 - val_accuracy: 0.8511
- val_loss: 0.4575 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.8163 - loss: 0.3927 - val_accuracy: 0.8191
- val_loss: 0.4221 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.8504 - loss: 0.3438 - val_accuracy: 0.7660
- val_loss: 0.7070 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.8151 - loss: 0.4252 - val_accuracy: 0.8085
- val_loss: 0.4382 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.8280 - loss: 0.3624 - val_accuracy: 0.8404
- val_loss: 0.3740 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 37ms/step - accuracy: 0.8481 - loss: 0.3513 - val_accuracy: 0.8191
- val_loss: 0.4911 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 38ms/step - accuracy: 0.8575 - loss: 0.3205 - val_accuracy: 0.8298
- val_loss: 0.4356 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 38ms/step - accuracy: 0.8645 - loss: 0.3127 - val_accuracy: 0.7872
```

```
- val_loss: 0.5606 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.8634 - loss: 0.3320 - val_accuracy: 0.8404
- val_loss: 0.4818 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 37ms/step - accuracy: 0.8622 - loss: 0.3059 - val_accuracy: 0.7979
- val_loss: 0.5214 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8551 - loss: 0.3484 - val_accuracy: 0.7872
- val_loss: 0.4563 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8669 - loss: 0.3135 - val_accuracy: 0.8085
- val_loss: 0.6670 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8598 - loss: 0.2999 - val_accuracy: 0.8298
- val_loss: 0.4315 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 37ms/step - accuracy: 0.8669 - loss: 0.3261 - val_accuracy: 0.8085
- val_loss: 0.4983 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8645 - loss: 0.2973 - val_accuracy: 0.7979
- val_loss: 0.5741 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.8810 - loss: 0.2918 - val_accuracy: 0.8298
- val_loss: 0.4421 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8810 - loss: 0.3088 - val_accuracy: 0.8298
- val_loss: 0.5441 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 37ms/step - accuracy: 0.8763 - loss: 0.2925 - val_accuracy: 0.7872
- val_loss: 0.5873 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8952 - loss: 0.2482 - val_accuracy: 0.7553
- val_loss: 0.6937 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 38ms/step - accuracy: 0.8563 - loss: 0.3495 - val_accuracy: 0.7660
- val_loss: 0.4380 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8987 - loss: 0.2556 - val_accuracy: 0.8085
- val_loss: 0.5535 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8999 - loss: 0.2567 - val_accuracy: 0.8298
- val_loss: 0.5477 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8975 - loss: 0.2541 - val_accuracy: 0.8404
- val_loss: 0.6620 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 39ms/step - accuracy: 0.8822 - loss: 0.2805 - val_accuracy: 0.7872
```

```
- val_loss: 0.5294 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8975 - loss: 0.2617 - val_accuracy: 0.7872
- val_loss: 0.5844 - learning_rate: 0.0050
```

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

```
Current validation accuracy: 0.7872340679168701
Reseting all weights…
Current number of trials: 31
```
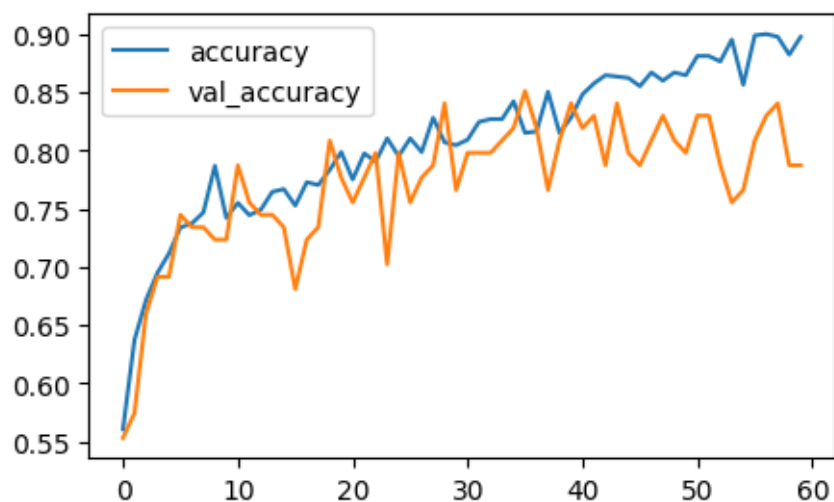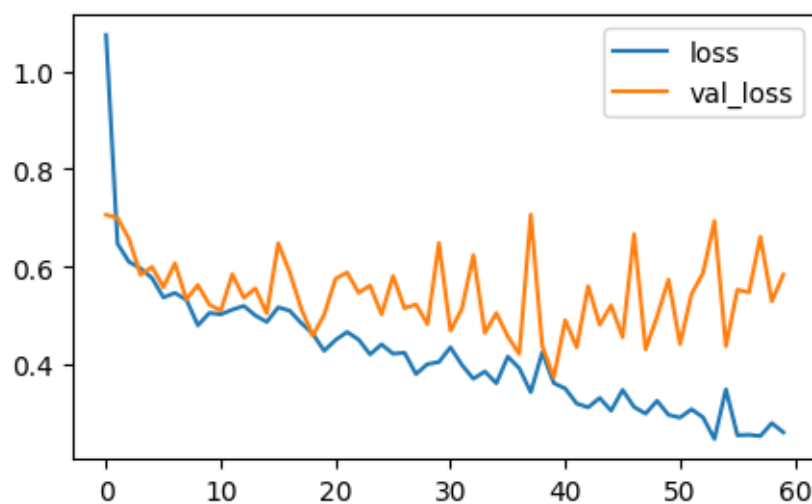
```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.7842 - loss: 0.6135
[0.5843643546104431, 0.7872340679168701]
3/3              0s 21ms/step
Classification Report:
            precision    recall  f1-score   support

     Female      0.73       0.80      0.77        41
       Male      0.84       0.77      0.80        53

   accuracy                           0.79        94
  macro avg      0.79       0.79      0.79        94
weighted avg     0.79       0.79      0.79        94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5159 - loss: 0.7948 - val_accuracy: 0.5532
- val_loss: 0.6812 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5878 - loss: 0.6758 - val_accuracy: 0.6489
- val_loss: 0.6543 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6372 - loss: 0.6488 - val_accuracy: 0.7021
- val_loss: 0.6224 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 36ms/step - accuracy: 0.6525 - loss: 0.6162 - val_accuracy: 0.7234
- val_loss: 0.6145 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 36ms/step - accuracy: 0.7197 - loss: 0.5867 - val_accuracy: 0.6702
- val_loss: 0.5642 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 36ms/step - accuracy: 0.7102 - loss: 0.5855 - val_accuracy: 0.6596
- val_loss: 0.6019 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.7397 - loss: 0.5440 - val_accuracy: 0.7553
- val_loss: 0.5018 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.7150 - loss: 0.5663 - val_accuracy: 0.7021
- val_loss: 0.5517 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 36ms/step - accuracy: 0.7161 - loss: 0.5747 - val_accuracy: 0.7234
- val_loss: 0.5637 - learning_rate: 0.0050
```

```
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.7491 - loss: 0.5339 - val_accuracy: 0.6915
- val_loss: 0.5867 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.6961 - loss: 0.5709 - val_accuracy: 0.7766
- val_loss: 0.5027 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.7432 - loss: 0.5300 - val_accuracy: 0.7021
- val_loss: 0.5247 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.7385 - loss: 0.5465 - val_accuracy: 0.6809
- val_loss: 0.6117 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7362 - loss: 0.5298 - val_accuracy: 0.7447
- val_loss: 0.4568 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.7468 - loss: 0.5255 - val_accuracy: 0.6915
- val_loss: 0.5476 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 36ms/step - accuracy: 0.7267 - loss: 0.5313 - val_accuracy: 0.7447
- val_loss: 0.5366 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7621 - loss: 0.5030 - val_accuracy: 0.7234
- val_loss: 0.5109 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7538 - loss: 0.5020 - val_accuracy: 0.7234
- val_loss: 0.6199 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 36ms/step - accuracy: 0.7621 - loss: 0.5112 - val_accuracy: 0.7766
- val_loss: 0.4909 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.7656 - loss: 0.5033 - val_accuracy: 0.7021
- val_loss: 0.6270 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.7527 - loss: 0.4956 - val_accuracy: 0.7021
- val_loss: 0.5973 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 36ms/step - accuracy: 0.7597 - loss: 0.4855 - val_accuracy: 0.7447
- val_loss: 0.4973 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.7621 - loss: 0.5308 - val_accuracy: 0.6915
- val_loss: 0.5538 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 36ms/step - accuracy: 0.7562 - loss: 0.5053 - val_accuracy: 0.7128
- val_loss: 0.5232 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.7691 - loss: 0.4760 - val_accuracy: 0.7340
- val_loss: 0.5433 - learning_rate: 0.0050
```

```
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.7845 - loss: 0.4727 - val_accuracy: 0.7660
- val_loss: 0.4096 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.7892 - loss: 0.4714 - val_accuracy: 0.7340
- val_loss: 0.5180 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.7503 - loss: 0.5000 - val_accuracy: 0.6915
- val_loss: 0.5595 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.7915 - loss: 0.4558 - val_accuracy: 0.7766
- val_loss: 0.4605 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.7915 - loss: 0.4569 - val_accuracy: 0.7021
- val_loss: 0.5980 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.7951 - loss: 0.4713 - val_accuracy: 0.7340
- val_loss: 0.6021 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.7750 - loss: 0.4690 - val_accuracy: 0.7447
- val_loss: 0.4714 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.8009 - loss: 0.4307 - val_accuracy: 0.7447
- val_loss: 0.5218 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.7915 - loss: 0.4430 - val_accuracy: 0.8191
- val_loss: 0.4066 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.8104 - loss: 0.4235 - val_accuracy: 0.7766
- val_loss: 0.4069 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.8080 - loss: 0.4171 - val_accuracy: 0.7660
- val_loss: 0.4683 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.8068 - loss: 0.4259 - val_accuracy: 0.7553
- val_loss: 0.4780 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.8139 - loss: 0.4459 - val_accuracy: 0.7340
- val_loss: 0.5634 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 36ms/step - accuracy: 0.7986 - loss: 0.4304 - val_accuracy: 0.7979
- val_loss: 0.4208 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 36ms/step - accuracy: 0.8151 - loss: 0.4161 - val_accuracy: 0.8085
- val_loss: 0.4538 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.8068 - loss: 0.4196 - val_accuracy: 0.7766
- val_loss: 0.4876 - learning_rate: 0.0050
```

```
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.8163 - loss: 0.3775 - val_accuracy: 0.7872
- val_loss: 0.4327 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 36ms/step - accuracy: 0.7797 - loss: 0.4501 - val_accuracy: 0.7872
- val_loss: 0.4695 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.8292 - loss: 0.4121 - val_accuracy: 0.8191
- val_loss: 0.4476 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.8151 - loss: 0.3998 - val_accuracy: 0.8298
- val_loss: 0.4237 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 36ms/step - accuracy: 0.8045 - loss: 0.4336 - val_accuracy: 0.7766
- val_loss: 0.5107 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 38ms/step - accuracy: 0.8045 - loss: 0.4515 - val_accuracy: 0.7766
- val_loss: 0.4707 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 36ms/step - accuracy: 0.8092 - loss: 0.4369 - val_accuracy: 0.7234
- val_loss: 0.4719 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.8210 - loss: 0.4035 - val_accuracy: 0.8191
- val_loss: 0.4014 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.8245 - loss: 0.4136 - val_accuracy: 0.8085
- val_loss: 0.4153 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.7998 - loss: 0.3984 - val_accuracy: 0.7979
- val_loss: 0.5461 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.8316 - loss: 0.3928 - val_accuracy: 0.7979
- val_loss: 0.4666 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.8433 - loss: 0.3785 - val_accuracy: 0.7979
- val_loss: 0.4429 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.8221 - loss: 0.3906 - val_accuracy: 0.7660
- val_loss: 0.4958 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 36ms/step - accuracy: 0.8327 - loss: 0.3857 - val_accuracy: 0.8085
- val_loss: 0.4060 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 36ms/step - accuracy: 0.8375 - loss: 0.3813 - val_accuracy: 0.8085
- val_loss: 0.4303 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.8221 - loss: 0.3847 - val_accuracy: 0.7660
- val_loss: 0.4876 - learning_rate: 0.0050
```

```
Epoch 58/60
27/27 - 1s - 36ms/step - accuracy: 0.8033 - loss: 0.4170 - val_accuracy: 0.7660
- val_loss: 0.4677 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.8422 - loss: 0.3500 - val_accuracy: 0.8085
- val_loss: 0.4381 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.8445 - loss: 0.3611 - val_accuracy: 0.8191
- val_loss: 0.4626 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.8191489577293396
Reseting all weights…
Current number of trials: 32
```
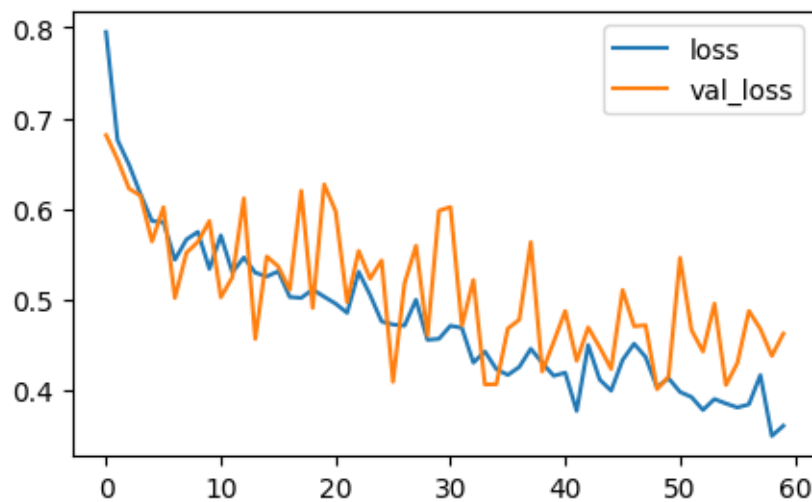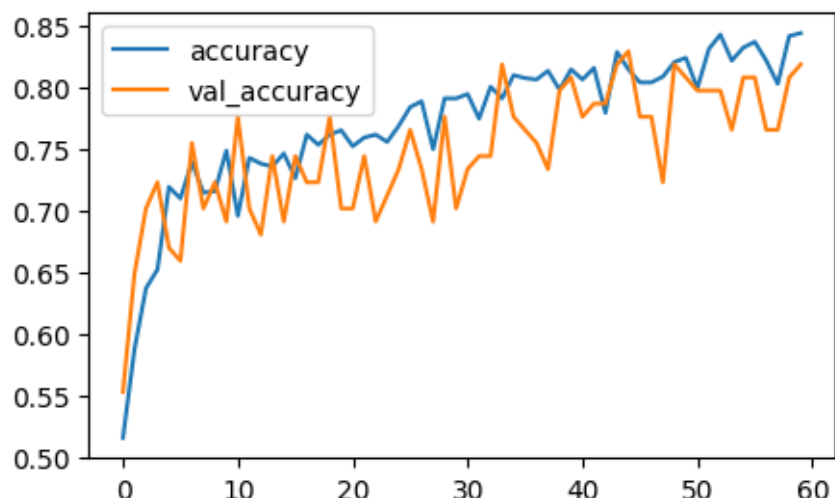
```
['loss', 'compile_metrics']
3/3                0s 10ms/step -
accuracy: 0.7924 - loss: 0.4961
[0.4626309871673584, 0.8191489577293396]
3/3                0s 21ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.76      0.85      0.80        41
        Male       0.88      0.79      0.83        53

    accuracy                           0.82        94
   macro avg       0.82      0.82      0.82        94
weighted avg       0.83      0.82      0.82        94


Found 943 files belonging to 2 classes.
Using 849 files for training.

2025-05-06 08:41:11.665658: I tensorflow/core/framework/local_rendezvous.cc:405]
Local rendezvous is aborting with status: OUT_OF_RANGE: End of sequence

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5571 - loss: 0.7652 - val_accuracy: 0.6170
- val_loss: 0.6765 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 39ms/step - accuracy: 0.6196 - loss: 0.6577 - val_accuracy: 0.6489
- val_loss: 0.6216 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6254 - loss: 0.6616 - val_accuracy: 0.6702
```

```
- val_loss: 0.6413 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.6678 - loss: 0.6136 - val_accuracy: 0.6596
- val_loss: 0.6222 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.6502 - loss: 0.6362 - val_accuracy: 0.5638
- val_loss: 0.6983 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 36ms/step - accuracy: 0.6702 - loss: 0.6235 - val_accuracy: 0.6702
- val_loss: 0.5612 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.6714 - loss: 0.6025 - val_accuracy: 0.7128
- val_loss: 0.5566 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.7279 - loss: 0.5636 - val_accuracy: 0.6915
- val_loss: 0.5679 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.6879 - loss: 0.5952 - val_accuracy: 0.6915
- val_loss: 0.6041 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7044 - loss: 0.5629 - val_accuracy: 0.7553
- val_loss: 0.5330 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7314 - loss: 0.5451 - val_accuracy: 0.7234
- val_loss: 0.5536 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.7338 - loss: 0.5353 - val_accuracy: 0.7340
- val_loss: 0.5530 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.7197 - loss: 0.5673 - val_accuracy: 0.7128
- val_loss: 0.5154 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.7314 - loss: 0.5482 - val_accuracy: 0.7872
- val_loss: 0.4994 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 37ms/step - accuracy: 0.7515 - loss: 0.5161 - val_accuracy: 0.7234
- val_loss: 0.5556 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7468 - loss: 0.5043 - val_accuracy: 0.7660
- val_loss: 0.4856 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7562 - loss: 0.4864 - val_accuracy: 0.7553
- val_loss: 0.4772 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 38ms/step - accuracy: 0.7656 - loss: 0.4922 - val_accuracy: 0.8191
- val_loss: 0.4755 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7279 - loss: 0.5377 - val_accuracy: 0.7234
```

```
- val_loss: 0.5487 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.7468 - loss: 0.5302 - val_accuracy: 0.7447
- val_loss: 0.5631 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 37ms/step - accuracy: 0.7550 - loss: 0.4935 - val_accuracy: 0.7872
- val_loss: 0.4784 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7585 - loss: 0.4870 - val_accuracy: 0.8085
- val_loss: 0.4317 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.7691 - loss: 0.4713 - val_accuracy: 0.7766
- val_loss: 0.5956 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 37ms/step - accuracy: 0.7845 - loss: 0.4517 - val_accuracy: 0.7979
- val_loss: 0.5193 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4873 - val_accuracy: 0.7872
- val_loss: 0.4800 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 37ms/step - accuracy: 0.7986 - loss: 0.4260 - val_accuracy: 0.7660
- val_loss: 0.4653 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.7927 - loss: 0.4418 - val_accuracy: 0.8085
- val_loss: 0.3938 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 37ms/step - accuracy: 0.7774 - loss: 0.4652 - val_accuracy: 0.7553
- val_loss: 0.4710 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.8033 - loss: 0.4395 - val_accuracy: 0.8085
- val_loss: 0.4582 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.8151 - loss: 0.3983 - val_accuracy: 0.8085
- val_loss: 0.3876 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 37ms/step - accuracy: 0.8139 - loss: 0.4185 - val_accuracy: 0.8191
- val_loss: 0.4015 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.8068 - loss: 0.4135 - val_accuracy: 0.8085
- val_loss: 0.3776 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.8327 - loss: 0.3920 - val_accuracy: 0.7979
- val_loss: 0.4175 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 38ms/step - accuracy: 0.8269 - loss: 0.3883 - val_accuracy: 0.8085
- val_loss: 0.4051 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 37ms/step - accuracy: 0.8021 - loss: 0.4356 - val_accuracy: 0.7766
```

- val_loss: 0.4196 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.8080 - loss: 0.4179 - val_accuracy: 0.8511
- val_loss: 0.3705 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.8316 - loss: 0.3908 - val_accuracy: 0.8298
- val_loss: 0.3700 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.8257 - loss: 0.4145 - val_accuracy: 0.8085
- val_loss: 0.4893 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 36ms/step - accuracy: 0.8163 - loss: 0.4170 - val_accuracy: 0.7553
- val_loss: 0.4937 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 36ms/step - accuracy: 0.8210 - loss: 0.3722 - val_accuracy: 0.7766
- val_loss: 0.4124 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.8316 - loss: 0.3557 - val_accuracy: 0.8723
- val_loss: 0.3233 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.8410 - loss: 0.3615 - val_accuracy: 0.8404
- val_loss: 0.3933 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.8433 - loss: 0.3649 - val_accuracy: 0.8404
- val_loss: 0.4357 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.8551 - loss: 0.3513 - val_accuracy: 0.8298
- val_loss: 0.4389 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.8445 - loss: 0.3456 - val_accuracy: 0.8191
- val_loss: 0.3804 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8339 - loss: 0.3788 - val_accuracy: 0.8191
- val_loss: 0.4015 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8669 - loss: 0.3172 - val_accuracy: 0.8191
- val_loss: 0.3084 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.8457 - loss: 0.3387 - val_accuracy: 0.7872
- val_loss: 0.3502 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.8469 - loss: 0.3489 - val_accuracy: 0.8191
- val_loss: 0.3517 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 37ms/step - accuracy: 0.8398 - loss: 0.3630 - val_accuracy: 0.7553
- val_loss: 0.4490 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.8575 - loss: 0.3199 - val_accuracy: 0.7660

- val_loss: 0.4510 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 37ms/step - accuracy: 0.8563 - loss: 0.3303 - val_accuracy: 0.8511
- val_loss: 0.3923 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.8787 - loss: 0.2741 - val_accuracy: 0.8404
- val_loss: 0.4331 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8704 - loss: 0.2856 - val_accuracy: 0.8085
- val_loss: 0.4129 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 36ms/step - accuracy: 0.8846 - loss: 0.2681 - val_accuracy: 0.7979
- val_loss: 0.3816 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8587 - loss: 0.3631 - val_accuracy: 0.8191
- val_loss: 0.4533 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8516 - loss: 0.3357 - val_accuracy: 0.8298
- val_loss: 0.3724 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 36ms/step - accuracy: 0.8492 - loss: 0.3064 - val_accuracy: 0.8298
- val_loss: 0.5589 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.8422 - loss: 0.3669 - val_accuracy: 0.7979
- val_loss: 0.4217 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 37ms/step - accuracy: 0.8763 - loss: 0.2905 - val_accuracy: 0.8298
- val_loss: 0.3912 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.8297872543334961
Reseting all weights…
Current number of trials: 33
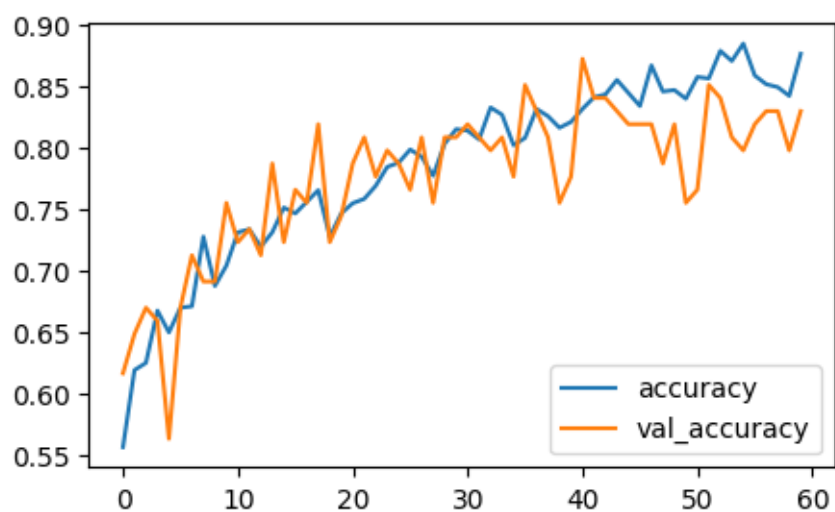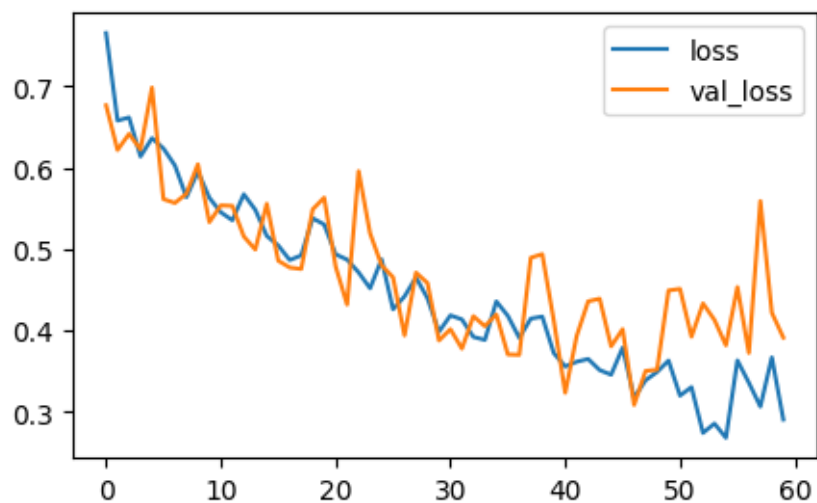
```
['loss', 'compile_metrics']
3/3               0s 9ms/step -
accuracy: 0.8211 - loss: 0.3965
[0.39119189977645874, 0.8297872543334961]
3/3               0s 21ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.79      0.83      0.81        41
        Male       0.86      0.83      0.85        53

    accuracy                           0.83        94
```

```
    macro avg        0.83      0.83      0.83         94
weighted avg         0.83      0.83      0.83         94


Found 943 files belonging to 2 classes.
Using 849 files for training.
Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 60ms/step - accuracy: 0.4994 - loss: 0.7594 - val_accuracy: 0.5638
- val_loss: 0.6880 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 36ms/step - accuracy: 0.5807 - loss: 0.6612 - val_accuracy: 0.6702
- val_loss: 0.6352 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6549 - loss: 0.6214 - val_accuracy: 0.6809
- val_loss: 0.5856 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 36ms/step - accuracy: 0.6855 - loss: 0.5935 - val_accuracy: 0.6915
- val_loss: 0.6048 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.7208 - loss: 0.5902 - val_accuracy: 0.6064
- val_loss: 0.6616 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.6926 - loss: 0.5864 - val_accuracy: 0.7340
- val_loss: 0.5972 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.7067 - loss: 0.5709 - val_accuracy: 0.7660
- val_loss: 0.5538 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.7114 - loss: 0.5690 - val_accuracy: 0.6915
- val_loss: 0.5535 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 36ms/step - accuracy: 0.6879 - loss: 0.5832 - val_accuracy: 0.7447
- val_loss: 0.5435 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.7161 - loss: 0.5785 - val_accuracy: 0.7447
- val_loss: 0.5629 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.7303 - loss: 0.5505 - val_accuracy: 0.6915
- val_loss: 0.5724 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.7362 - loss: 0.5320 - val_accuracy: 0.7340
- val_loss: 0.5238 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.7256 - loss: 0.5549 - val_accuracy: 0.7021
- val_loss: 0.5781 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 36ms/step - accuracy: 0.7197 - loss: 0.5596 - val_accuracy: 0.7234
```

```
- val_loss: 0.5260 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.7468 - loss: 0.5436 - val_accuracy: 0.7340
- val_loss: 0.5314 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 36ms/step - accuracy: 0.7338 - loss: 0.5326 - val_accuracy: 0.7021
- val_loss: 0.5400 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 36ms/step - accuracy: 0.7373 - loss: 0.5302 - val_accuracy: 0.6383
- val_loss: 0.5711 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.7479 - loss: 0.5248 - val_accuracy: 0.7660
- val_loss: 0.5334 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 36ms/step - accuracy: 0.7362 - loss: 0.5300 - val_accuracy: 0.7660
- val_loss: 0.5164 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.7633 - loss: 0.4889 - val_accuracy: 0.7660
- val_loss: 0.5927 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.7503 - loss: 0.5248 - val_accuracy: 0.7553
- val_loss: 0.5384 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.7256 - loss: 0.5308 - val_accuracy: 0.7872
- val_loss: 0.5297 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.7397 - loss: 0.5290 - val_accuracy: 0.7553
- val_loss: 0.5369 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 36ms/step - accuracy: 0.7715 - loss: 0.4812 - val_accuracy: 0.7766
- val_loss: 0.5252 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.7668 - loss: 0.4838 - val_accuracy: 0.7660
- val_loss: 0.5432 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.7491 - loss: 0.5154 - val_accuracy: 0.7128
- val_loss: 0.5263 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.7385 - loss: 0.5460 - val_accuracy: 0.6596
- val_loss: 0.5851 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.7114 - loss: 0.7395 - val_accuracy: 0.4681
- val_loss: 0.7538 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.5289 - loss: 0.7554 - val_accuracy: 0.5957
- val_loss: 0.6836 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 36ms/step - accuracy: 0.4865 - loss: 0.6999 - val_accuracy: 0.4362
```

```
- val_loss: 0.6944 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 35ms/step - accuracy: 0.4759 - loss: 0.6979 - val_accuracy: 0.4362
- val_loss: 0.7171 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 35ms/step - accuracy: 0.4935 - loss: 0.6949 - val_accuracy: 0.5638
- val_loss: 0.6875 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 35ms/step - accuracy: 0.5053 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6982 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6939 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6940 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.4782 - loss: 0.6955 - val_accuracy: 0.5638
- val_loss: 0.6914 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 36ms/step - accuracy: 0.4912 - loss: 0.6951 - val_accuracy: 0.4362
- val_loss: 0.6942 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.5029 - loss: 0.6940 - val_accuracy: 0.4362
- val_loss: 0.6975 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6943 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 35ms/step - accuracy: 0.4817 - loss: 0.6944 - val_accuracy: 0.5638
- val_loss: 0.6914 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.5053 - loss: 0.6946 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.4959 - loss: 0.6951 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 36ms/step - accuracy: 0.4641 - loss: 0.6937 - val_accuracy: 0.5638
- val_loss: 0.6927 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.5053 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6939 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 36ms/step - accuracy: 0.4935 - loss: 0.6936 - val_accuracy: 0.4362
```

```
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 36ms/step - accuracy: 0.4782 - loss: 0.6939 - val_accuracy: 0.4362
- val_loss: 0.6941 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6939 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6988 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.4770 - loss: 0.6944 - val_accuracy: 0.5638
- val_loss: 0.6923 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.5053 - loss: 0.6950 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 35ms/step - accuracy: 0.4900 - loss: 0.6945 - val_accuracy: 0.5638
- val_loss: 0.6913 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 35ms/step - accuracy: 0.5124 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.7004 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 36ms/step - accuracy: 0.4876 - loss: 0.6939 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6939 - val_accuracy: 0.4362
- val_loss: 0.6941 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6975 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 35ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6966 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
```
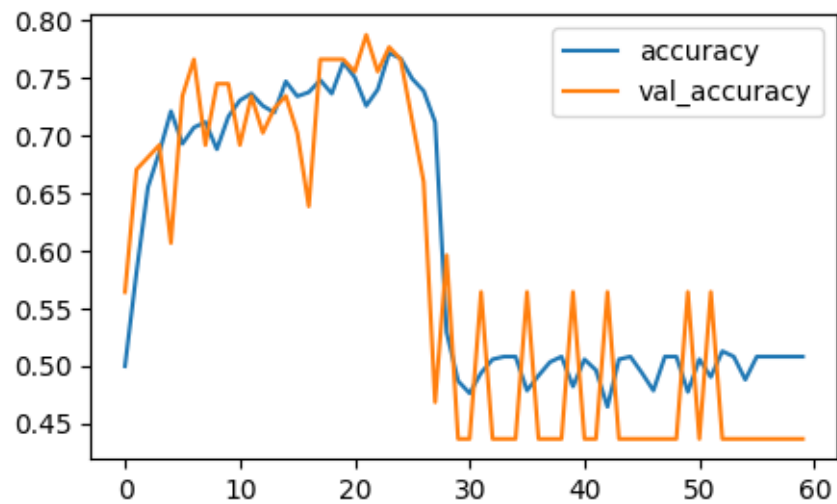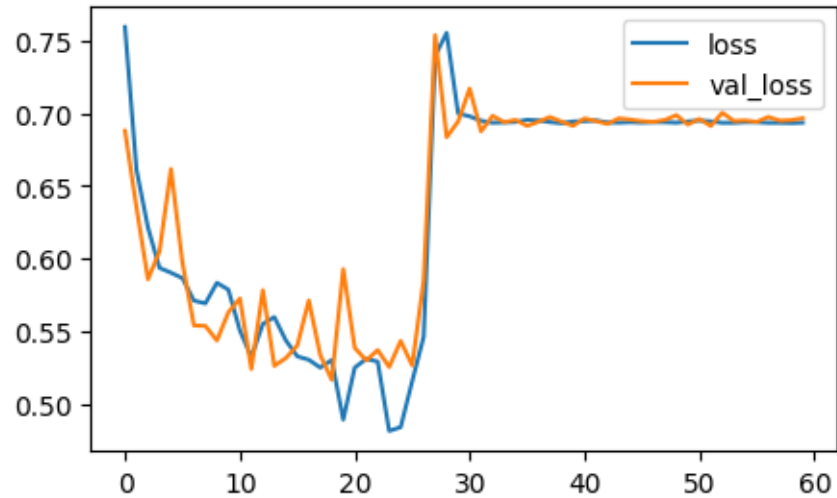
```
'my_model.keras')`.
```

Current validation accuracy: 0.43617022037506104
Reseting all weights…
Current number of trials: 34


```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.4603 - loss: 0.6954
[0.6966310739517212, 0.43617022037506104]
3/3              0s 21ms/step
Classification Report:
              precision    recall  f1-score    support
```

```
        Female        0.44        1.00        0.61        41
          Male        0.00        0.00        0.00        53

      accuracy                                0.44        94
     macro avg        0.22        0.50        0.30        94
  weighted avg        0.19        0.44        0.26        94
```

Found 943 files belonging to 2 classes.
Using 849 files for training.

/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 60ms/step - accuracy: 0.5406 - loss: 1.0475 - val_accuracy: 0.5851
- val_loss: 0.6849 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.4876 - loss: 0.6941 - val_accuracy: 0.4362
- val_loss: 0.6938 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6967 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6969 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362

```
- val_loss: 0.6973 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6977 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6969 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6969 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6943 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6941 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
```

```
- val_loss: 0.6971 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6968 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6936 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6947 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
```

```
- val_loss: 0.6970 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6968 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6970 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6935 - val_accuracy: 0.4362
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
```

```
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6948 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.

Current validation accuracy: 0.43617022037506104
Reseting all weights…
Current number of trials: 35
```
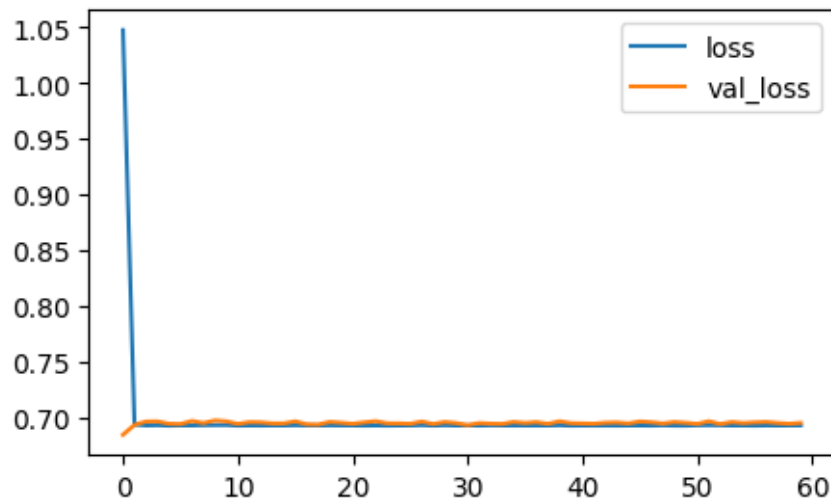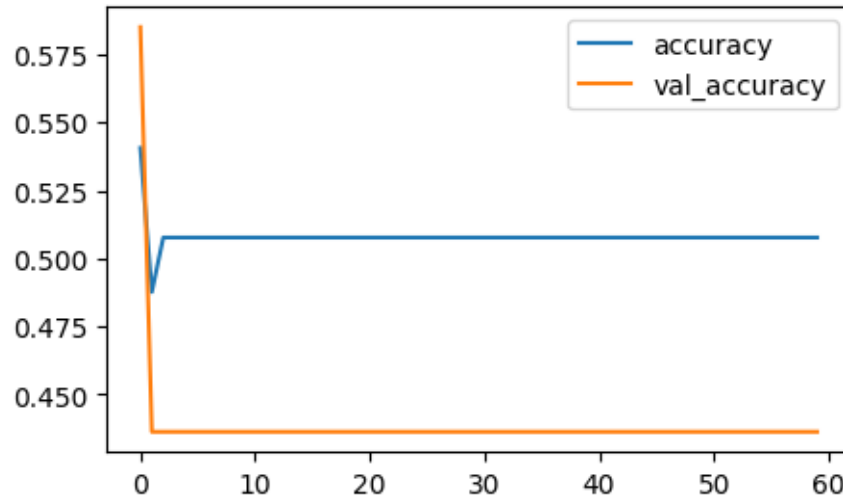
```
['loss', 'compile_metrics']
3/3               0s 10ms/step -
accuracy: 0.4603 - loss: 0.6947
[0.6955453753471375, 0.43617022037506104]
3/3               0s 21ms/step
Classification Report:
              precision    recall  f1-score   support

      Female       0.44      1.00      0.61        41
        Male       0.00      0.00      0.00        53

    accuracy                           0.44        94
   macro avg       0.22      0.50      0.30        94
weighted avg       0.19      0.44      0.26        94

Found 943 files belonging to 2 classes.
Using 849 files for training.

/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
```

Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 60ms/step - accuracy: 0.4876 - loss: 0.8853 - val_accuracy: 0.6064
- val_loss: 0.6864 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 37ms/step - accuracy: 0.5630 - loss: 0.6739 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6938 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6943 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.5018 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 36ms/step - accuracy: 0.4794 - loss: 0.6937 - val_accuracy: 0.4362
- val_loss: 0.6951 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6941 - val_accuracy: 0.4362
- val_loss: 0.6997 - learning_rate: 0.0050
Epoch 8/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6945 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6934 - val_accuracy: 0.4362
- val_loss: 0.6962 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
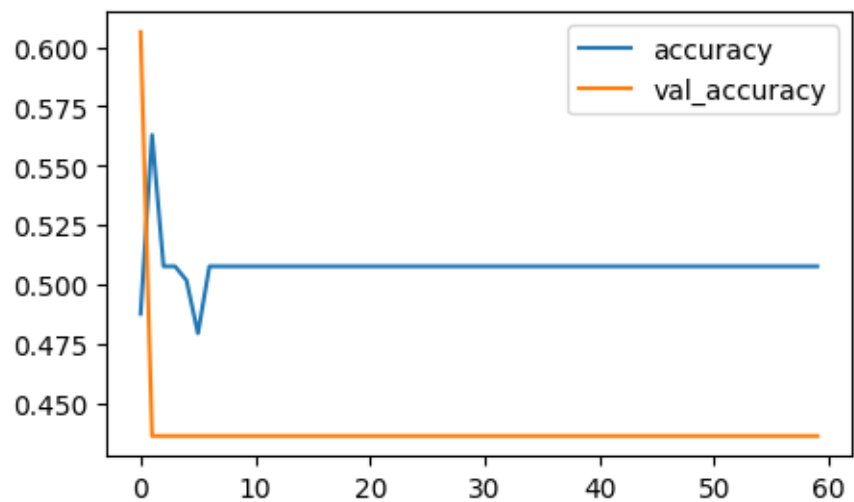- val_loss: 0.6946 - learning_rate: 0.0050

```
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6946 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 24/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6965 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6949 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 38ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
```
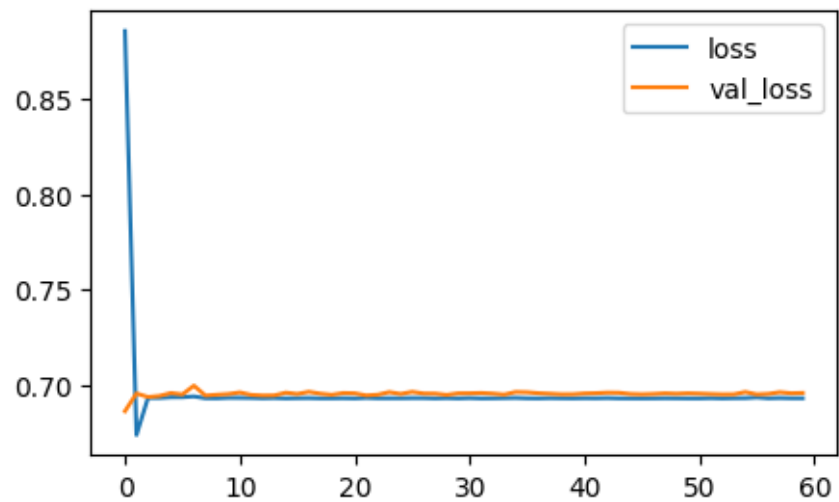
```
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6950 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 40/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6958 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6961 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6960 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
```

```
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6955 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6956 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6953 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6964 - learning_rate: 0.0050
Epoch 56/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6936 - val_accuracy: 0.4362
- val_loss: 0.6952 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6954 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6933 - val_accuracy: 0.4362
- val_loss: 0.6963 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.5077 - loss: 0.6932 - val_accuracy: 0.4362
- val_loss: 0.6957 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.5077 - loss: 0.6931 - val_accuracy: 0.4362
- val_loss: 0.6959 - learning_rate: 0.0050

WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.
```

Current validation accuracy: 0.43617022037506104
Reseting all weights…
Current number of trials: 36


```
['loss', 'compile_metrics']
3/3              0s 10ms/step -
accuracy: 0.4603 - loss: 0.6949
[0.6959123015403748, 0.43617022037506104]
3/3              0s 22ms/step
Classification Report:
              precision    recall  f1-score    support
```

```
      Female        0.44       1.00       0.61         41
        Male        0.00       0.00       0.00         53


    accuracy                              0.44         94
   macro avg        0.22       0.50       0.30         94
weighted avg        0.19       0.44       0.26         94
```

Found 943 files belonging to 2 classes.
Using 849 files for training.

/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/opt/anaconda3/envs/mytfenv/lib/python3.12/site-
packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning:
Precision is ill-defined and being set to 0.0 in labels with no predicted
samples. Use `zero_division` parameter to control this behavior.
  _warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

Found 943 files belonging to 2 classes.
Using 94 files for validation.
Epoch 1/60
27/27 - 2s - 61ms/step - accuracy: 0.5536 - loss: 0.8489 - val_accuracy: 0.6702
- val_loss: 0.6370 - learning_rate: 0.0050
Epoch 2/60
27/27 - 1s - 38ms/step - accuracy: 0.6537 - loss: 0.6493 - val_accuracy: 0.7234
- val_loss: 0.5821 - learning_rate: 0.0050
Epoch 3/60
27/27 - 1s - 37ms/step - accuracy: 0.6961 - loss: 0.5947 - val_accuracy: 0.6383
- val_loss: 0.6833 - learning_rate: 0.0050
Epoch 4/60
27/27 - 1s - 37ms/step - accuracy: 0.7314 - loss: 0.5600 - val_accuracy: 0.7021
- val_loss: 0.5614 - learning_rate: 0.0050
Epoch 5/60
27/27 - 1s - 37ms/step - accuracy: 0.7185 - loss: 0.5509 - val_accuracy: 0.7021
- val_loss: 0.5778 - learning_rate: 0.0050
Epoch 6/60
27/27 - 1s - 37ms/step - accuracy: 0.7067 - loss: 0.6112 - val_accuracy: 0.7128
- val_loss: 0.6218 - learning_rate: 0.0050
Epoch 7/60
27/27 - 1s - 37ms/step - accuracy: 0.7208 - loss: 0.5649 - val_accuracy: 0.7766
- val_loss: 0.5023 - learning_rate: 0.0050

```
Epoch 8/60
27/27 - 1s - 37ms/step - accuracy: 0.7515 - loss: 0.5254 - val_accuracy: 0.7447
- val_loss: 0.4719 - learning_rate: 0.0050
Epoch 9/60
27/27 - 1s - 37ms/step - accuracy: 0.7739 - loss: 0.4903 - val_accuracy: 0.7553
- val_loss: 0.5279 - learning_rate: 0.0050
Epoch 10/60
27/27 - 1s - 37ms/step - accuracy: 0.7951 - loss: 0.4633 - val_accuracy: 0.7979
- val_loss: 0.4795 - learning_rate: 0.0050
Epoch 11/60
27/27 - 1s - 37ms/step - accuracy: 0.7621 - loss: 0.4843 - val_accuracy: 0.7553
- val_loss: 0.5116 - learning_rate: 0.0050
Epoch 12/60
27/27 - 1s - 37ms/step - accuracy: 0.7515 - loss: 0.5149 - val_accuracy: 0.7660
- val_loss: 0.4952 - learning_rate: 0.0050
Epoch 13/60
27/27 - 1s - 36ms/step - accuracy: 0.7797 - loss: 0.4913 - val_accuracy: 0.7234
- val_loss: 0.6214 - learning_rate: 0.0050
Epoch 14/60
27/27 - 1s - 38ms/step - accuracy: 0.7809 - loss: 0.4588 - val_accuracy: 0.7660
- val_loss: 0.5368 - learning_rate: 0.0050
Epoch 15/60
27/27 - 1s - 36ms/step - accuracy: 0.7821 - loss: 0.4615 - val_accuracy: 0.7660
- val_loss: 0.5093 - learning_rate: 0.0050
Epoch 16/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4669 - val_accuracy: 0.8085
- val_loss: 0.5159 - learning_rate: 0.0050
Epoch 17/60
27/27 - 1s - 37ms/step - accuracy: 0.7750 - loss: 0.4506 - val_accuracy: 0.7766
- val_loss: 0.5253 - learning_rate: 0.0050
Epoch 18/60
27/27 - 1s - 38ms/step - accuracy: 0.7962 - loss: 0.4557 - val_accuracy: 0.7447
- val_loss: 0.5021 - learning_rate: 0.0050
Epoch 19/60
27/27 - 1s - 37ms/step - accuracy: 0.7880 - loss: 0.4360 - val_accuracy: 0.7553
- val_loss: 0.5333 - learning_rate: 0.0050
Epoch 20/60
27/27 - 1s - 37ms/step - accuracy: 0.7750 - loss: 0.4760 - val_accuracy: 0.8085
- val_loss: 0.4742 - learning_rate: 0.0050
Epoch 21/60
27/27 - 1s - 36ms/step - accuracy: 0.8210 - loss: 0.4311 - val_accuracy: 0.7766
- val_loss: 0.4544 - learning_rate: 0.0050
Epoch 22/60
27/27 - 1s - 36ms/step - accuracy: 0.8021 - loss: 0.4542 - val_accuracy: 0.7553
- val_loss: 0.4868 - learning_rate: 0.0050
Epoch 23/60
27/27 - 1s - 36ms/step - accuracy: 0.8221 - loss: 0.3662 - val_accuracy: 0.7660
- val_loss: 0.4364 - learning_rate: 0.0050
```

```
Epoch 24/60
27/27 - 1s - 36ms/step - accuracy: 0.8080 - loss: 0.4323 - val_accuracy: 0.8085
- val_loss: 0.4435 - learning_rate: 0.0050
Epoch 25/60
27/27 - 1s - 36ms/step - accuracy: 0.8115 - loss: 0.4372 - val_accuracy: 0.7447
- val_loss: 0.5003 - learning_rate: 0.0050
Epoch 26/60
27/27 - 1s - 36ms/step - accuracy: 0.7774 - loss: 0.4541 - val_accuracy: 0.7340
- val_loss: 0.5759 - learning_rate: 0.0050
Epoch 27/60
27/27 - 1s - 36ms/step - accuracy: 0.8021 - loss: 0.4146 - val_accuracy: 0.7340
- val_loss: 0.5564 - learning_rate: 0.0050
Epoch 28/60
27/27 - 1s - 36ms/step - accuracy: 0.7986 - loss: 0.4348 - val_accuracy: 0.7766
- val_loss: 0.6900 - learning_rate: 0.0050
Epoch 29/60
27/27 - 1s - 36ms/step - accuracy: 0.8210 - loss: 0.4132 - val_accuracy: 0.7979
- val_loss: 0.3987 - learning_rate: 0.0050
Epoch 30/60
27/27 - 1s - 36ms/step - accuracy: 0.8221 - loss: 0.3843 - val_accuracy: 0.8404
- val_loss: 0.4563 - learning_rate: 0.0050
Epoch 31/60
27/27 - 1s - 36ms/step - accuracy: 0.8245 - loss: 0.3839 - val_accuracy: 0.7979
- val_loss: 0.4783 - learning_rate: 0.0050
Epoch 32/60
27/27 - 1s - 36ms/step - accuracy: 0.8092 - loss: 0.4380 - val_accuracy: 0.8298
- val_loss: 0.4718 - learning_rate: 0.0050
Epoch 33/60
27/27 - 1s - 36ms/step - accuracy: 0.8304 - loss: 0.3693 - val_accuracy: 0.7979
- val_loss: 0.4189 - learning_rate: 0.0050
Epoch 34/60
27/27 - 1s - 38ms/step - accuracy: 0.7797 - loss: 0.4540 - val_accuracy: 0.8085
- val_loss: 0.4549 - learning_rate: 0.0050
Epoch 35/60
27/27 - 1s - 36ms/step - accuracy: 0.8257 - loss: 0.3800 - val_accuracy: 0.8085
- val_loss: 0.4467 - learning_rate: 0.0050
Epoch 36/60
27/27 - 1s - 37ms/step - accuracy: 0.8280 - loss: 0.3722 - val_accuracy: 0.7979
- val_loss: 0.4236 - learning_rate: 0.0050
Epoch 37/60
27/27 - 1s - 37ms/step - accuracy: 0.8280 - loss: 0.3919 - val_accuracy: 0.7979
- val_loss: 0.4118 - learning_rate: 0.0050
Epoch 38/60
27/27 - 1s - 36ms/step - accuracy: 0.8198 - loss: 0.4139 - val_accuracy: 0.8404
- val_loss: 0.4177 - learning_rate: 0.0050
Epoch 39/60
27/27 - 1s - 36ms/step - accuracy: 0.8363 - loss: 0.3720 - val_accuracy: 0.8511
- val_loss: 0.3258 - learning_rate: 0.0050
```

```
Epoch 40/60
27/27 - 1s - 37ms/step - accuracy: 0.8221 - loss: 0.3879 - val_accuracy: 0.8298
- val_loss: 0.4123 - learning_rate: 0.0050
Epoch 41/60
27/27 - 1s - 36ms/step - accuracy: 0.8457 - loss: 0.3323 - val_accuracy: 0.8191
- val_loss: 0.4530 - learning_rate: 0.0050
Epoch 42/60
27/27 - 1s - 36ms/step - accuracy: 0.8563 - loss: 0.3349 - val_accuracy: 0.8298
- val_loss: 0.3633 - learning_rate: 0.0050
Epoch 43/60
27/27 - 1s - 37ms/step - accuracy: 0.8563 - loss: 0.3264 - val_accuracy: 0.8617
- val_loss: 0.3792 - learning_rate: 0.0050
Epoch 44/60
27/27 - 1s - 37ms/step - accuracy: 0.8398 - loss: 0.3568 - val_accuracy: 0.7872
- val_loss: 0.4689 - learning_rate: 0.0050
Epoch 45/60
27/27 - 1s - 36ms/step - accuracy: 0.8575 - loss: 0.3362 - val_accuracy: 0.8404
- val_loss: 0.4156 - learning_rate: 0.0050
Epoch 46/60
27/27 - 1s - 37ms/step - accuracy: 0.8539 - loss: 0.3544 - val_accuracy: 0.8404
- val_loss: 0.3898 - learning_rate: 0.0050
Epoch 47/60
27/27 - 1s - 37ms/step - accuracy: 0.8269 - loss: 0.3575 - val_accuracy: 0.7979
- val_loss: 0.4388 - learning_rate: 0.0050
Epoch 48/60
27/27 - 1s - 36ms/step - accuracy: 0.8410 - loss: 0.3557 - val_accuracy: 0.8298
- val_loss: 0.3561 - learning_rate: 0.0050
Epoch 49/60
27/27 - 1s - 36ms/step - accuracy: 0.8292 - loss: 0.3563 - val_accuracy: 0.8404
- val_loss: 0.4850 - learning_rate: 0.0050
Epoch 50/60
27/27 - 1s - 38ms/step - accuracy: 0.8386 - loss: 0.3431 - val_accuracy: 0.8085
- val_loss: 0.3550 - learning_rate: 0.0050
Epoch 51/60
27/27 - 1s - 36ms/step - accuracy: 0.8610 - loss: 0.3115 - val_accuracy: 0.8404
- val_loss: 0.3211 - learning_rate: 0.0050
Epoch 52/60
27/27 - 1s - 36ms/step - accuracy: 0.8634 - loss: 0.3263 - val_accuracy: 0.8511
- val_loss: 0.3875 - learning_rate: 0.0050
Epoch 53/60
27/27 - 1s - 36ms/step - accuracy: 0.8669 - loss: 0.3097 - val_accuracy: 0.8617
- val_loss: 0.3717 - learning_rate: 0.0050
Epoch 54/60
27/27 - 1s - 37ms/step - accuracy: 0.8516 - loss: 0.3562 - val_accuracy: 0.8191
- val_loss: 0.3414 - learning_rate: 0.0050
Epoch 55/60
27/27 - 1s - 36ms/step - accuracy: 0.8327 - loss: 0.3517 - val_accuracy: 0.7979
- val_loss: 0.5417 - learning_rate: 0.0050
```

```
Epoch 56/60
27/27 - 1s - 37ms/step - accuracy: 0.8622 - loss: 0.3304 - val_accuracy: 0.8298
- val_loss: 0.3502 - learning_rate: 0.0050
Epoch 57/60
27/27 - 1s - 37ms/step - accuracy: 0.8610 - loss: 0.3222 - val_accuracy: 0.8191
- val_loss: 0.3857 - learning_rate: 0.0050
Epoch 58/60
27/27 - 1s - 37ms/step - accuracy: 0.8528 - loss: 0.3522 - val_accuracy: 0.8511
- val_loss: 0.4443 - learning_rate: 0.0050
Epoch 59/60
27/27 - 1s - 37ms/step - accuracy: 0.8669 - loss: 0.3105 - val_accuracy: 0.8404
- val_loss: 0.3642 - learning_rate: 0.0050
Epoch 60/60
27/27 - 1s - 36ms/step - accuracy: 0.8810 - loss: 0.2868 - val_accuracy: 0.8723
- val_loss: 0.3119 - learning_rate: 0.0050
```

```
WARNING:absl:You are saving your model as an HDF5 file via `model.save()` or
`keras.saving.save_model(model)`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')` or `keras.saving.save_model(model,
'my_model.keras')`.
```

```
Current validation accuracy: 0.8723404407501221
Reseting all weights…
Current number of trials: 37
```
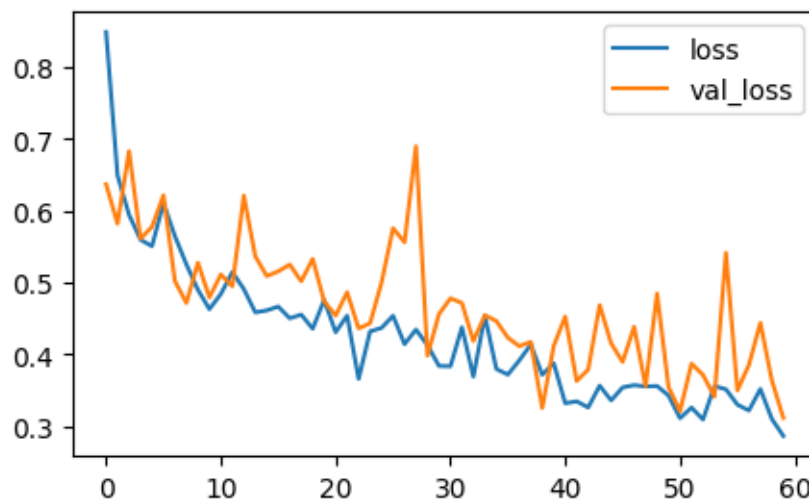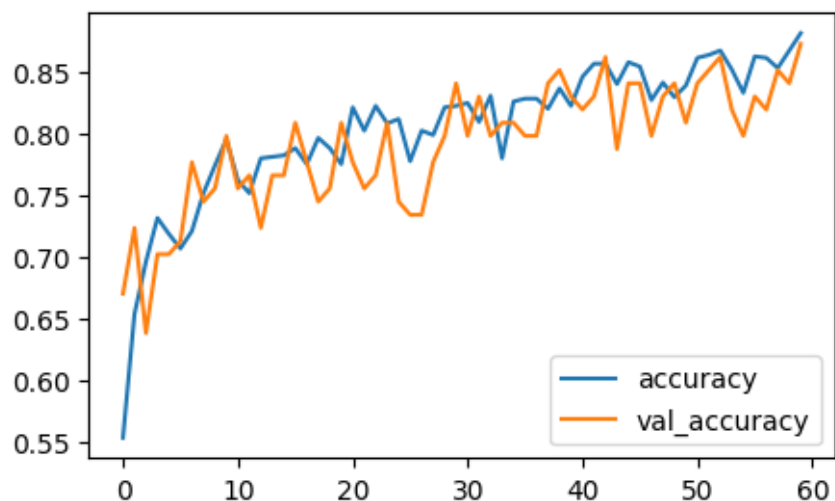
```
['loss', 'compile_metrics']
3/3                0s 9ms/step -
accuracy: 0.8580 - loss: 0.3402
[0.3118947446346283, 0.8723404407501221]
3/3                0s 22ms/step
Classification Report:
                precision    recall  f1-score   support

      Female        0.81      0.93      0.86        41
        Male        0.94      0.83      0.88        53

    accuracy                            0.87        94
   macro avg        0.87      0.88      0.87        94
weighted avg        0.88      0.87      0.87        94
```

[1]:	accuracy	loss	val_accuracy	val_loss	learning_rate
0	0.553592	0.848945	0.670213	0.637046	0.005
1	0.653710	0.649346	0.723404	0.582119	0.005
2	0.696113	0.594732	0.638298	0.683288	0.005
3	0.731449	0.559954	0.702128	0.561352	0.005
4	0.718492	0.550910	0.702128	0.577776	0.005
5	0.706714	0.611195	0.712766	0.621761	0.005
6	0.720848	0.564867	0.776596	0.502348	0.005
7	0.751472	0.525420	0.744681	0.471890	0.005
8	0.773852	0.490340	0.755319	0.527854	0.005
9	0.795053	0.463264	0.797872	0.479548	0.005
10	0.762073	0.484336	0.755319	0.511574	0.005
11	0.751472	0.514928	0.765957	0.495168	0.005
12	0.779741	0.491280	0.723404	0.621352	0.005

```
13   0.780919   0.458815        0.765957   0.536841            0.005
14   0.782097   0.461529        0.765957   0.509320            0.005
```

[ ]:

[ ]:

[ ]: