```
C:\Users\arina\PycharmProjects\PythonProject\.venv\Scripts\python.exe "C:\Users\arina\PycharmProjects\PythonProject\Deepfake Detection\main.py"
2025-10-09 07:10:50.379453: I tensorflow/core/util/port.cc:153] oneDNN custom operations are on. You may see slightly different numerical results due to floating-point round-off errors from different computation orders. To turn them off, set the environment variable `TF_ENABLE_ONEDNN_OPTS=0`.
2025-10-09 07:10:58.300799: I tensorflow/core/util/port.cc:153] oneDNN custom operations are on. You may see slightly different numerical results due to floating-point round-off errors from different computation orders. To turn them off, set the environment variable `TF_ENABLE_ONEDNN_OPTS=0`.
Using TensorFlow 2.20.0
Config: {
  "model_name": "efficientnetb7",
  "data_dir": "C:/Users/arina/PycharmProjects/PythonProject/Deepfake Detection/Frames/FF/FF 600",
  "epochs": 20,
  "batch_size": 32,
  "seed": 42,
  "base_trainable_at": null,
  "warmup_epochs": 3,
  "learning_rate": 0.001,
  "fine_tune_lr": 0.0001,
  "use_class_weights": false,
  "mixed_precision": false,
  "output_dir": "C:/Users/arina/PycharmProjects/PythonProject/Deepfake Detection/Model/Initial/EfficientNetB7_FF"
}
Found 60796 images belonging to 2 classes.
Found 13032 images belonging to 2 classes.
Found 13030 images belonging to 2 classes.
2025-10-09 07:11:08.858995: I tensorflow/core/platform/cpu_feature_guard.cc:210] This TensorFlow binary is optimized to use available CPU instructions in performance-critical operations.
To enable the following instructions: SSE3 SSE4.1
```

```
23 SSE4.2, in other operations, rebuild TensorFlow with
   the appropriate compiler flags.
24 C:\Users\arina\PycharmProjects\PythonProject\.venv\
   Lib\site-packages\keras\src\trainers\data_adapters\
   py_dataset_adapter.py:121: UserWarning: Your `
   PyDataset` class should call `super().__init__(**
   kwargs)` in its constructor. `**kwargs` can include `
   workers`, `use_multiprocessing`, `max_queue_size`. Do
    not pass these arguments to `fit()`, as they will be
    ignored.
25   self._warn_if_super_not_called()
26 Epoch 1/3
27 1900/1900 ━━━━━━━━━━━━━━━━━━━━ 0s 27s/step - accuracy
   : 0.8749 - loss: 0.3847
28 Epoch 1: val_accuracy improved from -inf to 0.87838,
   saving model to C:/Users/arina/PycharmProjects/
   PythonProject/Deepfake Detection/Model/Initial/
   EfficientNetB7_FF\best_warmup.keras
29 1900/1900 ━━━━━━━━━━━━━━━━━━━━ 63634s 33s/step -
   accuracy: 0.8749 - loss: 0.3847 - val_accuracy: 0.
   8784 - val_loss: 0.3630 - learning_rate: 0.0010
30 Epoch 2/3
31 1900/1900 ━━━━━━━━━━━━━━━━━━━━ 0s 26s/step - accuracy
   : 0.8786 - loss: 0.3679
32 Epoch 2: val_accuracy improved from 0.87838 to 0.
   88014, saving model to C:/Users/arina/PycharmProjects
   /PythonProject/Deepfake Detection/Model/Initial/
   EfficientNetB7_FF\best_warmup.keras
33 1900/1900 ━━━━━━━━━━━━━━━━━━━━ 59016s 31s/step -
   accuracy: 0.8786 - loss: 0.3679 - val_accuracy: 0.
   8801 - val_loss: 0.3556 - learning_rate: 0.0010
34 Epoch 3/3
35 1900/1900 ━━━━━━━━━━━━━━━━━━━━ 0s 26s/step - accuracy
   : 0.8777 - loss: 0.3680
36 Epoch 3: val_accuracy did not improve from 0.88014
37 1900/1900 ━━━━━━━━━━━━━━━━━━━━ 59389s 31s/step -
   accuracy: 0.8777 - loss: 0.3680 - val_accuracy: 0.
   8791 - val_loss: 0.3650 - learning_rate: 0.0010
38 Saved final model to: C:/Users/arina/PycharmProjects/
   PythonProject/Deepfake Detection/Model/Initial/
   EfficientNetB7_FF\efficientnetb7.keras
```

```
Evaluating on test set...
408/408 ━━━━━━━━━━━━━━━━━━━━ 10243s 25s/step - accuracy: 0.9917 - loss: 0.1312
Test accuracy: 0.8618 | Test loss: 0.3510
408/408 ━━━━━━━━━━━━━━━━━━━━ 9998s 24s/step
              df  precision: 0.86  recall: 0.98  f1-score: 0.92  support: 11428.0
            real  precision: 0.94  recall: 0.02  f1-score: 0.06  support: 1602.0
        accuracy: 0.86
       macro avg  precision: 0.90  recall: 0.50  f1-score: 0.49  support: 13030.0
    weighted avg  precision: 0.87  recall: 0.86  f1-score: 0.81  support: 13030.0
Confusion Matrix:
 [[11425     3]
 [ 1537    65]]

Process finished with exit code 0

```