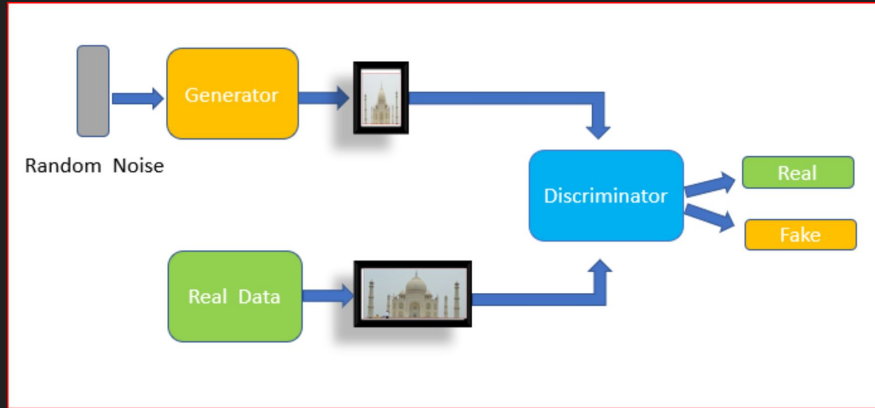# AI-Generated Image Classifier

Thomas Cazort
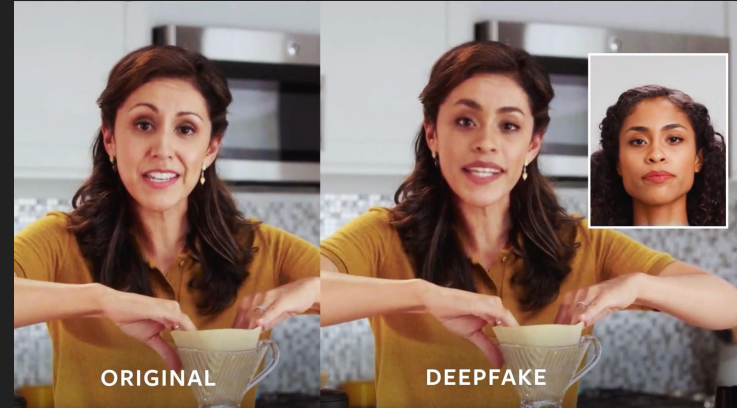
Introduction

Related Work

Goodfellow et al., Generative Adversarial
Networks, 2014

Maras, M.-H., & Alexandrou, A.,
Determining authenticity of video
evidence in the age of artificial
intelligence and in the wake of Deepfake
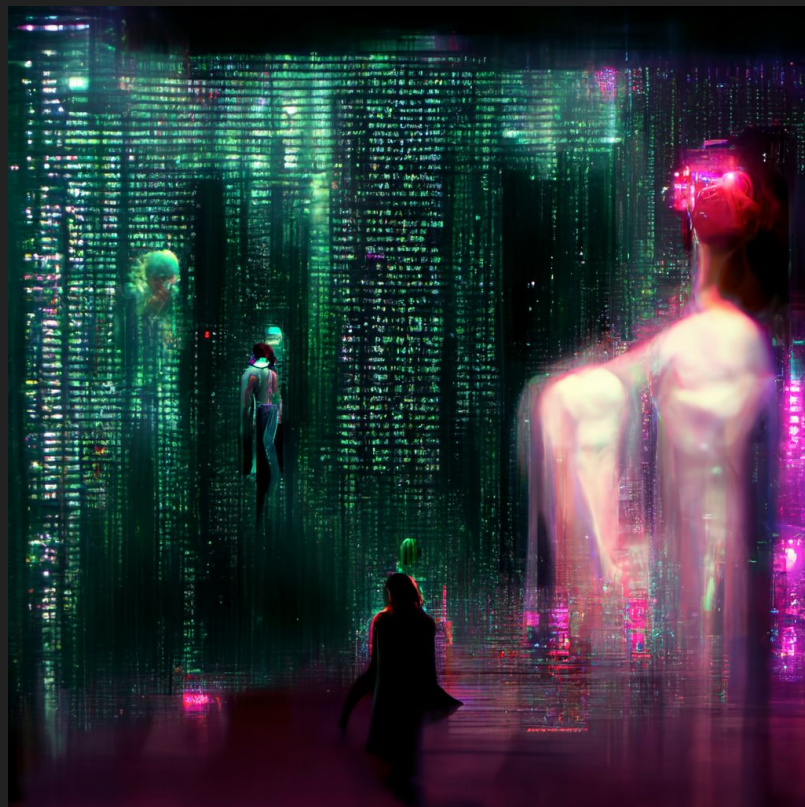videos, 2018

Datasets

Midjourney

Wiki-Art

Midjourney

Midjourney

Midjourney

Wiki-Art

Wiki-Art

Convolutional Neural Network

```python
model = Sequential()

model.add(Conv2D(filters=32,
                 kernel_size=(3, 3),
                 activation='relu',
                 input_shape=input_shape))
model.add(Conv2D(64, (3, 3), activation='relu'))
model.add(MaxPooling2D(pool_size=(2, 2)))
model.add(Dropout(0.25))
model.add(Flatten())
model.add(Dense(128, activation='relu'))
model.add(Dropout(0.25))
model.add(Dense(1, activation='sigmoid'))
```

Layer (type)	Output Shape	Param #
conv2d_2 (Conv2D)	(None, 254, 254, 32)	896
conv2d_3 (Conv2D)	(None, 252, 252, 64)	18496
max_pooling2d_1 (MaxPooling 2D)	(None, 126, 126, 64)	0
dropout_2 (Dropout)	(None, 126, 126, 64)	0
flatten_1 (Flatten)	(None, 1016064)	0
dense_2 (Dense)	(None, 128)	130056320
dropout_3 (Dropout)	(None, 128)	0
dense_3 (Dense)	(None, 1)	129

```python
model.compile(loss=tf.keras.losses.binary_crossentropy,
              optimizer=keras.optimizers.Adam(),
              metrics=['accuracy'])
```

Results

```
model.fit(X_train, y_train, batch_size=64, epochs=3, verbose=1)

Epoch 1/3
127/127 [==============================] - 730s 6s/step - loss: 1.4126 - accuracy: 0.7808
Epoch 2/3
127/127 [==============================] - 733s 6s/step - loss: 0.2814 - accuracy: 0.8995
Epoch 3/3
127/127 [==============================] - 716s 6s/step - loss: 0.1536 - accuracy: 0.9435
```

```
results = model.evaluate(X_test, y_test, batch_size=64)

15/15 [==============================] - 17s 1s/step - loss: 0.2749 - accuracy: 0.9101
```

My Experience

- Data Collection
- Data Processing
- CNN Sequence
- Training Times