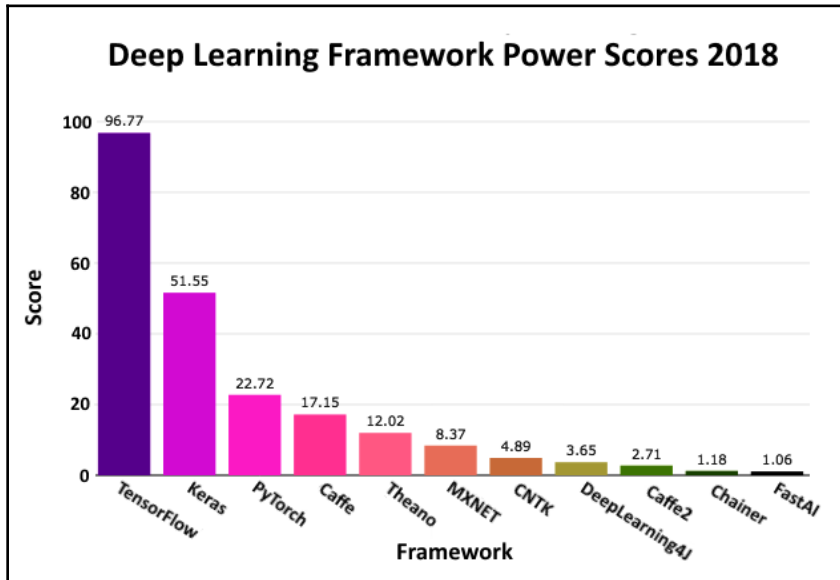


# Chapter 02: Keras, a High-Level API for TensorFlow 2



Layer (type)	Output Shape	Param #
flatten_1 (Flatten)	multiple	0
dense_2 (Dense)	multiple	401920
dropout_1 (Dropout)	multiple	0
dense_3 (Dense)	multiple	5130

Total params: 407,050  
Trainable params: 407,050  
Non-trainable params: 0

---

```
model3.summary()
```

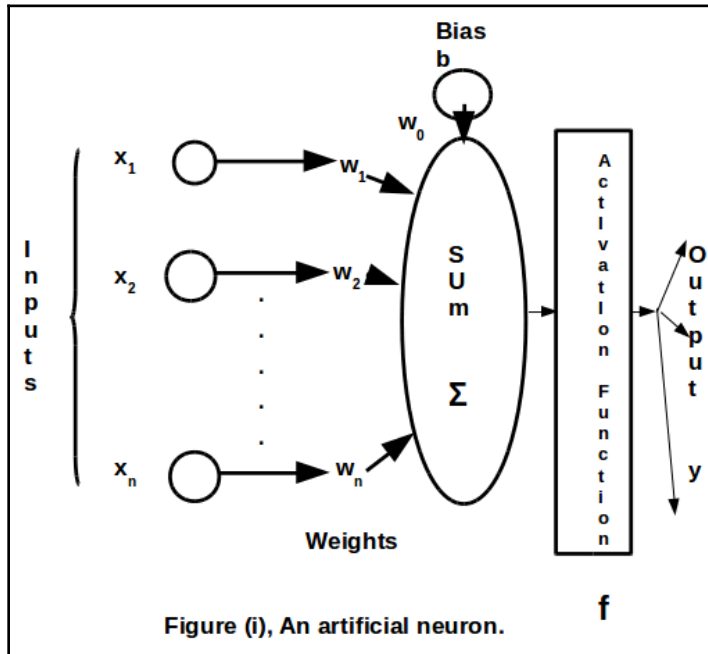
Layer (type)	Output Shape	Param #
input_3 (InputLayer)	(None, 28, 28)	0
flatten_2 (Flatten)	(None, 784)	0
d1 (Dense)	(None, 512)	401920
dropout_2 (Dropout)	(None, 512)	0
d2 (Dense)	(None, 10)	5130

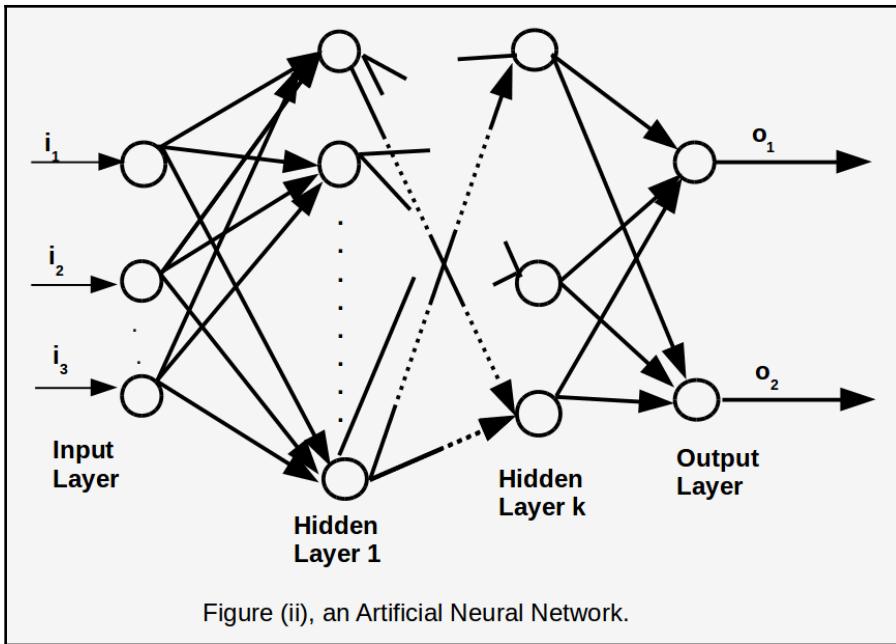
Total params: 407,050  
Trainable params: 407,050  
Non-trainable params: 0

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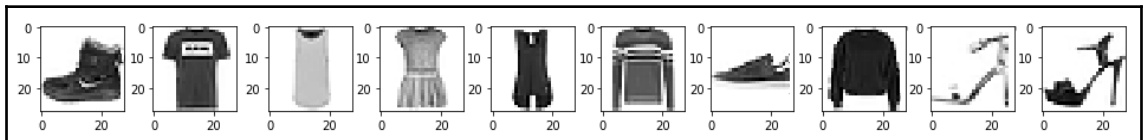
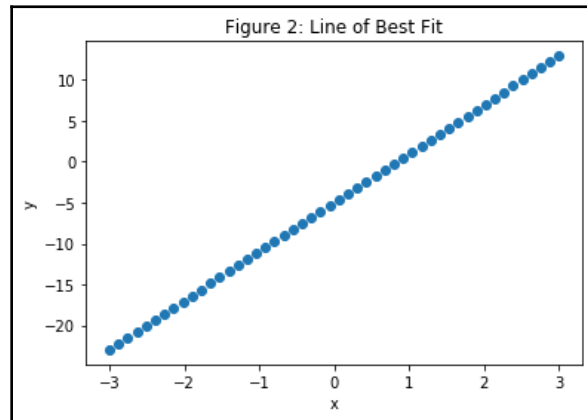
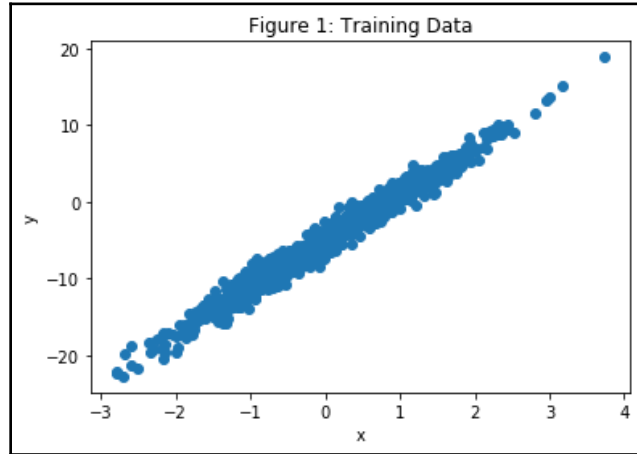
# Chapter 03: ANN Technologies Using TensorFlow 2

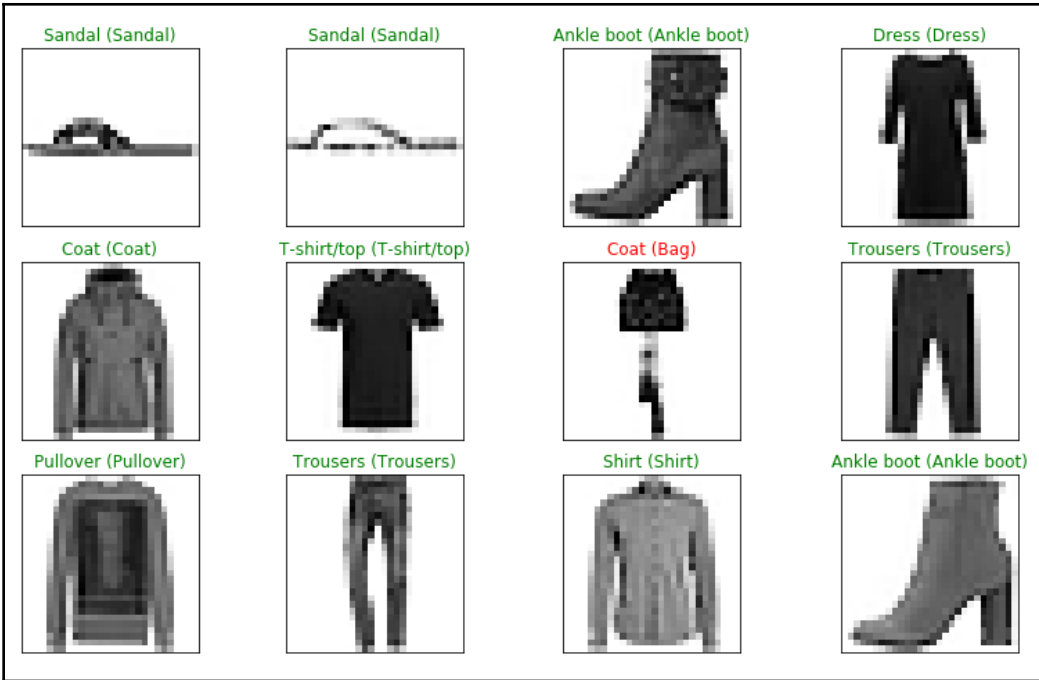




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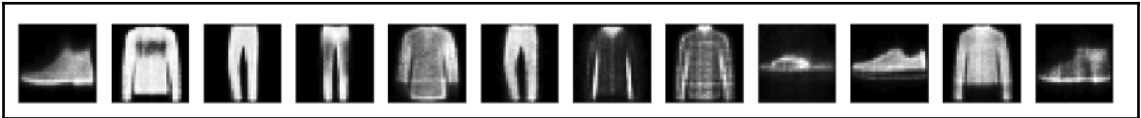
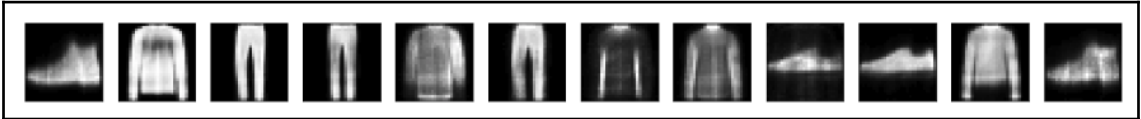
# Chapter 04: Supervised Machine Learning Using TensorFlow 2



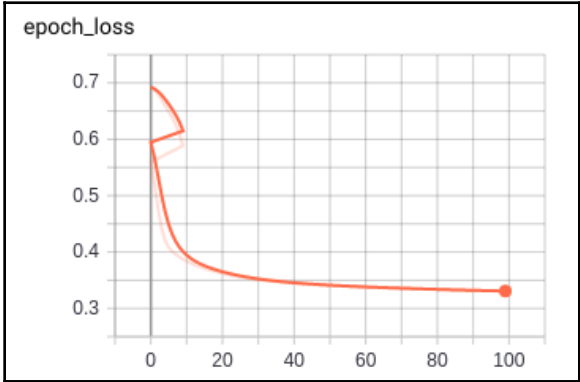
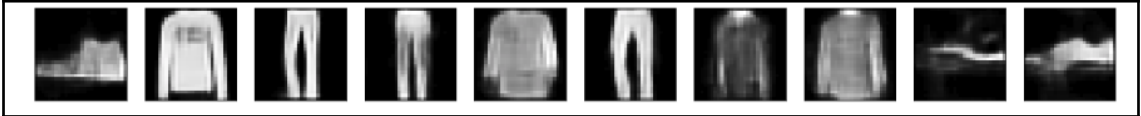


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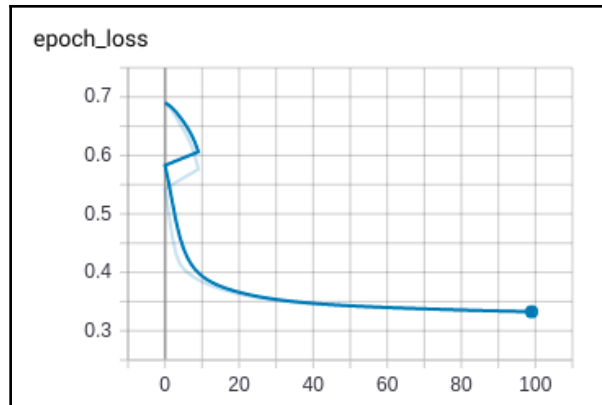
# Chapter 05: Unsupervised Learning Using TensorFlow 2



Layer (type)	Output Shape	Param #
input_1 (InputLayer)	(None, 28, 28, 1)	0
conv2d (Conv2D)	(None, 28, 28, 32)	320
max_pooling2d (MaxPooling2D)	(None, 14, 14, 32)	0
conv2d_1 (Conv2D)	(None, 14, 14, 32)	9248
max_pooling2d_1 (MaxPooling2D)	(None, 7, 7, 32)	0
conv2d_2 (Conv2D)	(None, 7, 7, 32)	9248
up_sampling2d (UpSampling2D)	(None, 14, 14, 32)	0
conv2d_3 (Conv2D)	(None, 14, 14, 32)	9248
up_sampling2d_1 (UpSampling2D)	(None, 28, 28, 32)	0
conv2d_4 (Conv2D)	(None, 28, 28, 1)	289
Total params: 28,353		
Trainable params: 28,353		
Non-trainable params: 0		

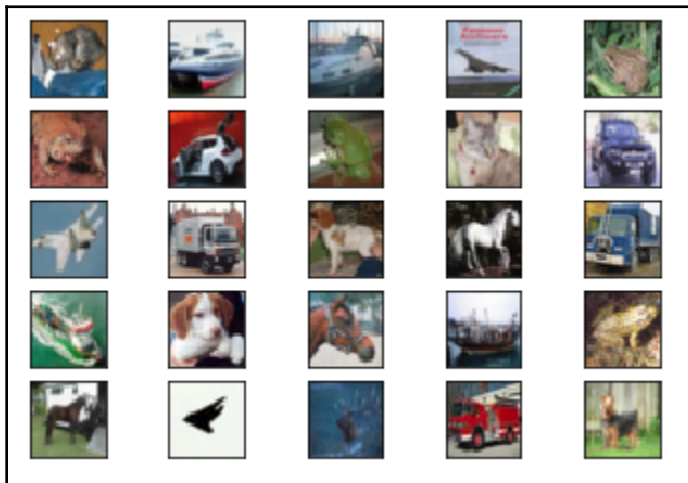






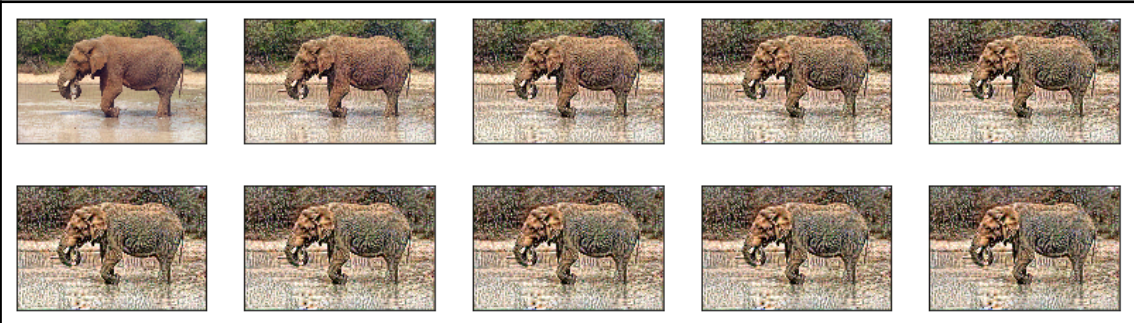
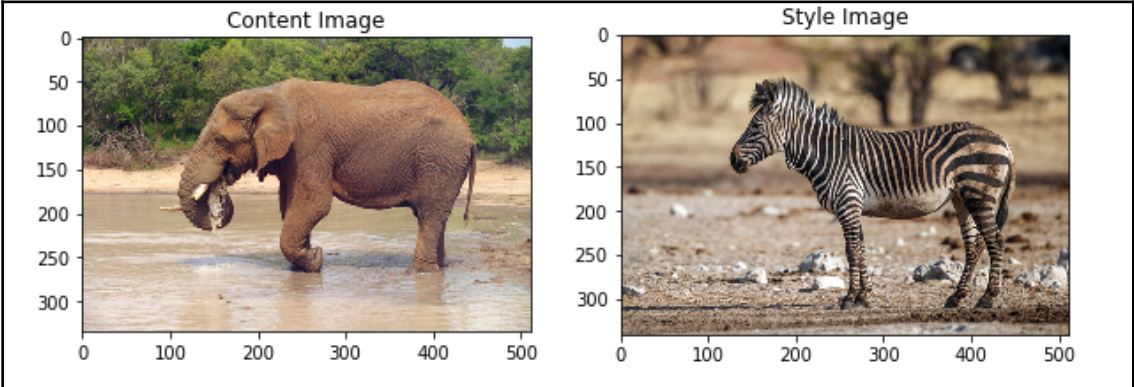
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# Chapter 06: Recognizing Images with TensorFlow 2



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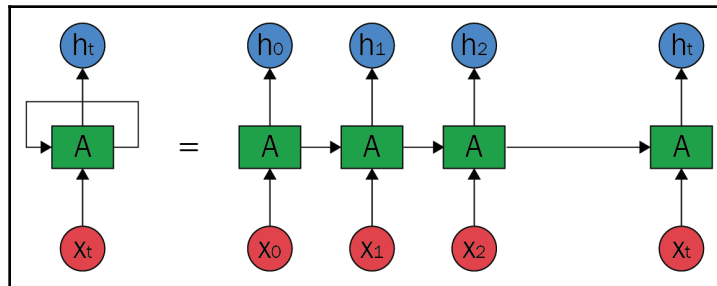
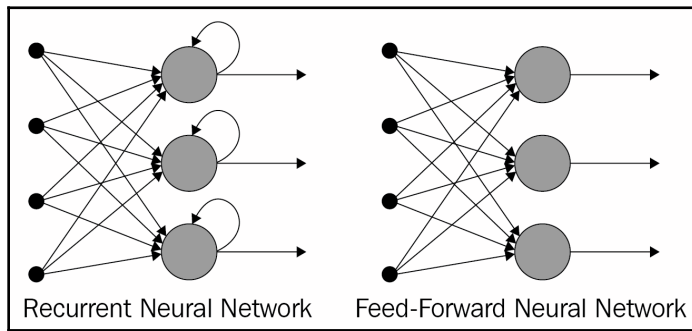
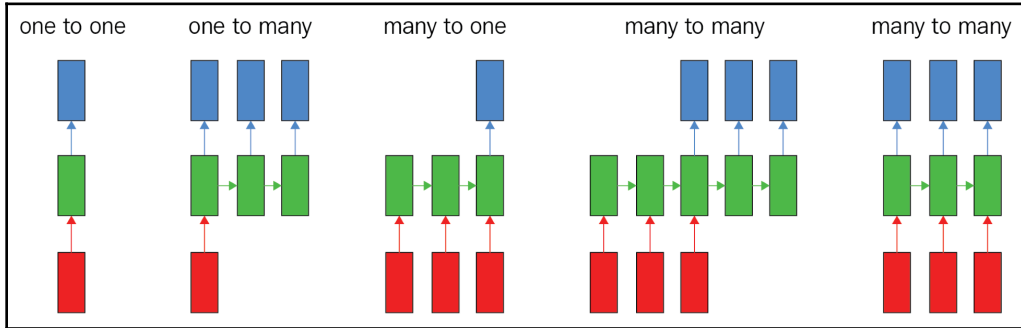
# Chapter 07: Neural Style Transfer Using TensorFlow 2

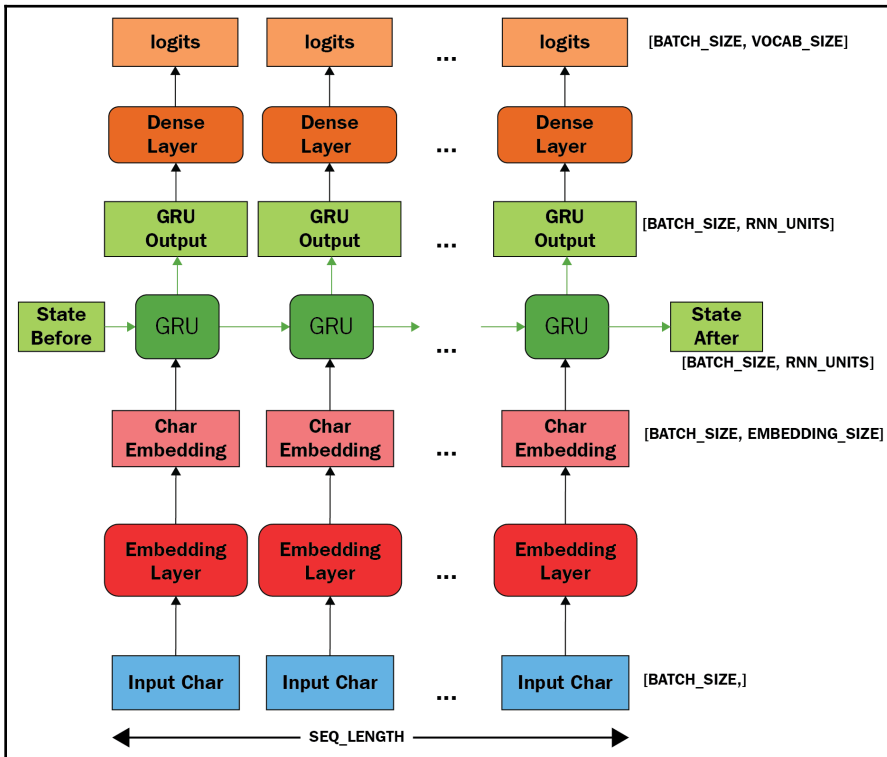
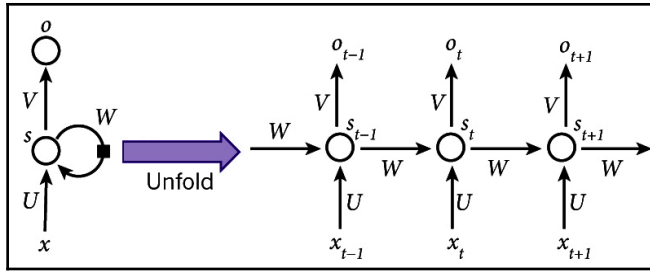




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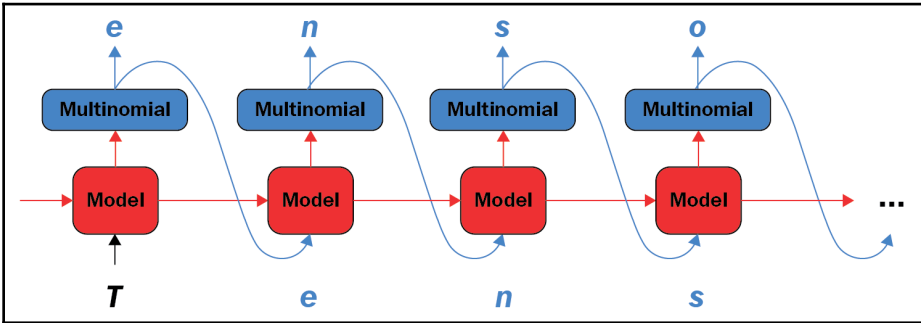
# Chapter 08: Recurrent Neural Networks Using TensorFlow 2





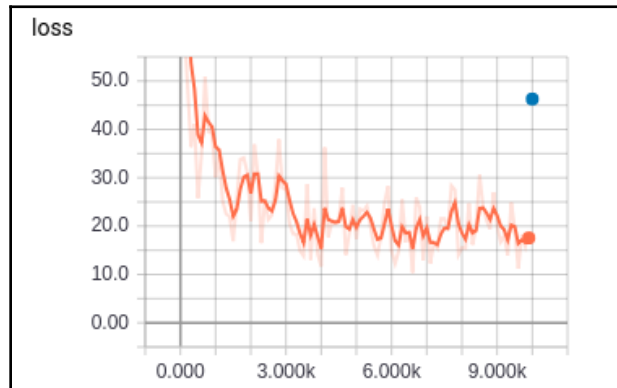
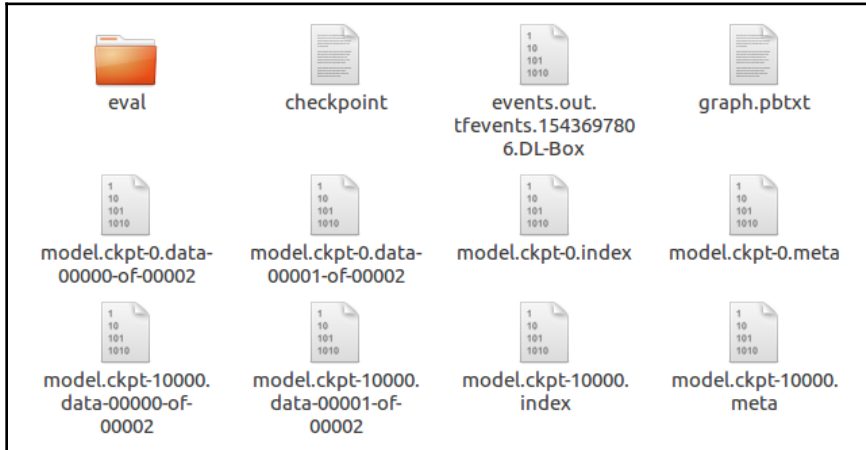
Layer (type)	Output Shape	Param #
embedding (Embedding)	(64, None, 256)	21504
cu_dnngru (CuDNNGRU)	(64, None, 1024)	3938304
dense (Dense)	(64, None, 84)	86100
Total params: 4,045,908		
Trainable params: 4,045,908		
Non-trainable params: 0		

Layer (type)	Output Shape	Param #
embedding_1 (Embedding)	(1, None, 256)	21504
cu_dnngru_1 (CuDNNGRU)	(1, None, 1024)	3938304
dense_1 (Dense)	(1, None, 84)	86100
Total params: 4,045,908		
Trainable params: 4,045,908		
Non-trainable params: 0		



---

# Chapter 09: TensorFlow Estimators and TensorFlow Hub





```
train_df.head()
```

	description	sentiment	polarity
0	I have to admit, I wasn't expecting much going...	9	1
1	Of the three titles from Jess Franco to find t...	3	0
2	This movie wasn't just bad - it was terrible. ...	1	0
3	I love this film 'Spring and port wine'. I was...	10	1
4	Not being familiar with US television stations...	4	0

```
train_df.tail()
```

	description	sentiment	polarity
24995	You know a movie will not go well when John Ca...	1	0
24996	The story centers around Barry McKenzie who mu...	10	1
24997	I'm not a writer or an critic...I'M just a stu...	10	1
24998	Jake's Closet has the emotional power of Krame...	9	1
24999	This wretched movie shows that not even some o...	2	0

